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THE PROGRESS OF SURGERY IN THE LAST TWENTY-FIVE YEARS.

The Presidential Address,
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BY

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IT is a well-known fact that objects viewed from a distance seem of smaller dimensions than they really are, and so it is with events which are to happen in the far-off future. If a task which might appear insuperable to-day is not to be done for many months, it is regarded as of ready accomplishment until the time for its performance draws near. This is how matters appeared to me when I was asked if I would undertake the office of President of this Branch for the present year. I at once accepted the proffered honour, as if it were an easy duty and one of light importance; but as time went on and the event came within measurable distance, many difficulties presented themselves which I had not foreseen, not the least of these being the fact that I should have to deliver an address to so many whom I

am exceedingly pleased and honoured to welcome to-day as my guests.

With regard to the subject of my address, I wish to say something to you of the progress of surgery which has occurred in the last twenty-five years, during which time I have watched it with continuous pleasure and interest. Never in the last two thousand years has surgery progressed so rapidly; and this is not due simply to gradual general all-round improvements, but entirely to the influence of one man, whose name will be handed down, and referred to as we now refer to Harvey and Hunter. That man is, of course, Sir Joseph Lister, and it is to his work and its results that I wish to ask you to look for a little.

When Lister commenced his work the occurrence of septicæmia, pyæmia, erysipelas, and hospital gangrene were constant factors with which the surgeon had to reckon. Such complications were always recurring in his cases, and the fear of their occurrence with fatal result prevented him from attempting many operations altogether. If in the light of our present knowledge we look back at surgical procedure then, we cannot be surprised that the so-called septic diseases did prevail. I can remember when our preparation of ligatures at the Radcliffe Infirmary was something as follows: Six yards of whitey-brown thread were stretched across the room, and rubbed well with an old piece of beeswax. The thread was then cut in eighteen inch lengths, and attached with pins to the dirtiest possible pincushion, from which, when beaten, dust rose in clouds. This cushion was soiled with blood-clot and discharges from many previous operations. An old surgeon quoted by Lunn said: "I like a good stink in a wound. Give me a wound that is fœtid. I don't care for it a bit; it is wholesome." These merely show what were common characters in the preparations for operation and in the results obtained. It is no wonder that the latter were bad. Lister, dissatisfied with what he found and seeking for the cause, put to himself this question: "How is it that an external wound leads to such grave results in cases of fracture, while cases of simple fracture heal without any trouble? Is it not probably by the atmosphere inducing decomposition of the blood which is effused in greater or less amount around the

fragments and among the interstices of the tissues, and to this blood, losing by putrefaction its natural bland character and assuming the properties of an acrid irritant, occasioning both local and general disturbance?"

Now, how does the atmosphere produce decomposition of organic substances? We find that a flood of light was thrown upon this most important subject by the philosophic researches of Pasteur, who demonstrated by thoroughly convincing evidence that it is not to its oxygen or to any of its gaseous constituents that the air owes these hurtful properties, but wholly to minute living particles suspended in it. Applying these principles to the treatment of compound fractures and bearing in mind that it is from the vitality of the atmospheric particles that all the mischief arises, Lister then argued that all that is requisite is to dress the wound with some material capable of killing these septic germs, provided that any substance can be found trustworthy for this purpose, and yet not too potent as a caustic. Lister says that in the year 1864 he was much struck with an account of the remarkable effects produced by carbolic acid upon the sewage of the town of Carlisle, the admixture of a very small proportion not only preventing all odour from the lands irrigated with the refuse material, but, as it was stated, destroying the entozoa which usually infest cattle fed upon such pastures. Lister's first application of his theory was made in Glasgow Royal Infirmary in 1865, the method at that time being to apply lint dipped in pure liquid carbolic acid upon the wound. The first case was unsuccessful, in consequence of improper management, but subsequent trials more than realised his most sanguine anticipations. Now, from that time to this these principles have gradually grown, till now it is universally recognised that "suppuration occurring in a wound made by a surgeon through unbroken skin is due to some oversight on his part." The actual use of carbolic acid to wounds was, as you know, not original to Lister, but was used first by Lemaire, who used it indiscriminately for all diseases, both internally and externally; and Guthrie, in the Peninsula War, used chloride of zinc to all the sloughing wounds with markedly good effect.

To the Listerian surgery there have, of course, been many

oppositions, and yet it has gained more and more disciples until, at the present time, we hear of absolutely no opposition, every surgeon now endeavouring to obtain the results which Lister showed could be obtained if his preventive measures were adopted. Those who have opposed Lister ought to be thanked very much by those who have practised his principles with enthusiasm, as it has made the latter all the more careful to carry out the details with still greater accuracy, and their opposition has also called attention to any fallacies existing in the antiseptic proceedings. There have also been many and frequent alterations in the *technique* of antiseptic procedures, and nothing indicates the true greatness of its author more than the way in which he has always recognised defects in his own system, and striven to improve it. He would never be satisfied until he had attained as nearly as possible to perfection. In no detail has this been better illustrated than in the attitude he took up with regard to the use of the spray. Lister had been led by Pasteur's discovery of putrefactive organisms in the air to introduce the carbolic spray in order to kill these organisms, and this spray, being a very obvious instrument, naturally attracted attention; and as the scientific knowledge on the subject advanced, it became more and more evident that the organisms which give rise to the particular form of putrefaction called septic disease come not so much from the air, but from the patient's skin, the hands of the operator, and the latter's instruments. When this was clearly made out, Lister at once acknowledged that the spray was not essential. In the *Lancet* of August, 1883, in answer to the question as to whether he had given up the spray, he writes:—"I have not given up the spray, although I certainly regard it as the least important part of our antiseptic arrangements. Whatever other good it may do, it is a very mild form of antiseptic irrigation, and tends to keep the *entourage* of the wound, including the surgeon's hands and instruments, pure; but if I had not a spray-producer at hand, I should not on that account omit other elements of antiseptic treatment."

The chief recent modification of antiseptic surgery has been the development of aseptic surgery. This is no new principle.

The great aim of antiseptic surgery all along has been to prevent the access of germs to a wound. In aseptic surgery, instead of employing chemical antiseptic solutions to kill the organisms, heat is employed. The advantage claimed is that no irritating chemical material is carried into the wound by instruments, &c.

This aseptic surgery is an addition to antiseptic surgery, for it is quite impossible for any surgeon to do without some form of chemical antiseptic in addition to heat; for it is quite impossible to boil the surgeon's hands or the patient's skin, which are the most dangerous carriers of septic materials into the wounds. A surgeon never knows whether he may not have to arrest hemorrhage in a wound already septic before he is called to a case. Kocher, who has been held up as the great advocate of aseptic surgery, says in his recent book on *Operative Surgery:* "Thanks to antiseptics, we are now able to bring about rapid healing in sutured operation wounds, however large, and the result has been that operative surgery has made extraordinary strides. As soon as we are sure of our antiseptics we may cut down upon any part of the body, not only with a therapeutic, but also with a diagnostic, intent. It is all the more our duty, therefore, in view of the extraordinary widening of the indications for operative treatment, to make our *technique* as perfect as possible." To carry out the sterilisation of the instruments and dressings, we may therefore either use antiseptic solutions or sterilise by heat. As regards sterilisation of the wound, it may be shortly stated that if, as Zimmermann has proved, it is not possible by contact with 1—1000 sublimate solution to sterilise with certainty pieces of flesh which have been momentarily contaminated with micro-organisms, then there is no hope of doing it in wounds. Nevertheless, Zimmermann obtained by such disinfection a very distinct difference in degree, inasmuch as far fewer colonies developed, and these took longer to appear in consequence of having been weakened by the antiseptics. Therefore, sterilising of the hands before operation and the washing-out of a wound after operation with sublimate solution 1—500 is to be advised. Aseptic surgery really consists of the scientific principle of cleanliness, using the word "clean" in the sense of "free from

germs." Now, a very common criticism of modern surgery is that it is nothing more than cleanliness, using the word in the ordinary æsthetic sense. This is not the case, and I think if we look back to the pre-antiseptic era we shall find that the surgeon considered apparent cleanliness as most important. An example of this is found in the manner in which Liston treated his amputations in the year 1842. He kept clean lint soaked in cold water between the flaps for two days, and then brought the flaps together with sutures and isinglass plaster, "instead," as he says, "of using resinous plaster, which is a dirty application. When suppuration is fairly established, tepid water and a stimulating lotion are used." You see from this that while cleanliness was considered most important, there was no attempt at primary union, which is the great criterion of success under the Listerian system.

Even in its early developments the antiseptic system showed a decided improvement over results obtained in the immediately preceding epoch. Thus the results of primary amputations had been exceedingly bad, and where secondary amputation was resorted to the results were still more disastrous. In the Franco-Prussian War only a few recoveries took place under such circumstances. In one year, at Munich, 11 out of 17 amputations died. Comparing the statistics of amputation in the pre-antiseptic period with later results, out of 377 cases 110 died. In the cases treated antiseptically, out of 321 cases only 14 died; and if you remove the cases that died of shock the results are still more remarkable, as in the first series six died from shock and in the last eight died from shock. It may be said that the delays of antiseptic procedure add to the shock, but I think that with increased probability of recovery, more severe cases are submitted to operations if they can be treated antiseptically. In Lister's own wards, before the antiseptic procedures were introduced, out of a series of 35 amputations 16 deaths occurred. The introduction of his system at once led to a change, for out of the next 40 amputations only 6 died. In Volkmann's *clinique* the mortality of the compound fractures before the antiseptic era was very large, for out of 14 such cases 12 died, while when antisepsis was prac-

tised, out of 75 compound fractures no death occurred; and in more modern times, over larger groups of cases, the results are even more striking. Thus in 1892, in St. Thomas's Hospital, London, out of 1,108 operations performed, there occurred only 11 deaths from pyæmia—contracted either before or after admission—or about 1 per cent. In 1893, 1,250 operations were performed with 16 deaths from pyæmia, or 1.2 per cent. In the Edinburgh Infirmary during 1893, 2,670 operations were performed, and 18 deaths from pyæmia occurred, or only .7 per cent. Not only, however, has the practice of antisepsis decreased the actual mortality, but the time of healing of wounds has been strikingly diminished. In former days an excision of the breast averaged from three to six months in healing, and for any ordinary accidental wound nine weeks were allowed for the patient to remain in hospital. At the present time fourteen days is the average time for an excision of the breast to heal, and many minor wounds which were formerly admitted into hospitals are now treated as out-patients. The saving of suffering to patients which has come about as a consequence of the introduction of antiseptics is thus beyond all calculation.

But mere statistics do not show all the advantages which have come from the Listerian system. One great change that has come over surgery is the removal of formerly-admitted anatomical restrictions upon surgical operations. The operation of trephining the skull no doubt dates from prehistoric times, but interference by the surgeon with the brain itself has only been done of late years. The history of trephining is interesting. The ancients trephined in all fractures, either to relieve symptoms if they were present, or to prevent them coming on if they were absent. They trepanned along the whole course of the fracture, so as to saw it out. Godifredus, chief surgeon to the States of Holland, mentions with particular exultation the performance of this operation by a friend, who trepanned the cranium of the Count of Nassau twenty-seven times; and that the fact might be established on indisputable authority, he made the said Count of Nassau, after he was recovered, write the following curious certificate on the 12th day of August, 1664: "I, the underwritten Philip, Count of Nassau, hereby declare and testify that

Mr. Henry Chadborn did trepan me in the skull twenty-seven times, and after that did cure me well and soundly." Regarding such procedures, Pirrie wrote in 1840: "These fractures and the numerous inventions of instruments for cutting the skull are sad monuments of the surgery of past ages." Desault, after that time, in Paris, pointed out the numerous unfortunate results of the operation, and stated that its practice was reduced down to only trephining in compound depressed fractures of the skull, and in depressed fractures with symptoms. It is interesting now to see Macewen's statistics and Victor Horsley operating on the skull with a trephine with two-inch diameter worked by an electro-motor.

Macewen, in his famous address on cerebral surgery before the British Medical Association in Glasgow in 1888, pointed out that two factors were necessary for the introduction of modern cerebral surgery. It was necessary (1) to adopt means whereby immunity from the inflammations which so constantly attended brain-lesions could be secured; and (2) to endeavour to gain a better physiological knowledge, in the hope that light might be shed by the localisation of cerebral lesions. He further says: "Experience gained by me showed that not only compound fractures of the skull, but large osseous defects in the cranial vault accompanied by extensive lesions of cerebral substance were quite amenable to treatment, exhibiting no tendency to inflammatory action as long as the tissues were preserved aseptic." Macewen's record bore out with what success he carried out his principles—out of twenty-one cases only three deaths resulted. His successes included abscess of the brain, tumour of the dura mater, intracranial subdural effusion, syphilitic tumour, cysts of the brain—all of them conditions which formerly surgery would never have thought of attacking.

Then, again, radical cure of hernia by open wound was performed by Celsus, but fell entirely into disuse until the year 1875, and now every organ of the body has been treated by the surgeon. The field of direct surgical interference was formerly limited to the limbs, and to the common coverings of the great serous membranes. Surgeons were content to feel that the

peritoneum, the kidney, and the lung were beyond the limits of legitimate surgical interference.

Perhaps the most obvious of the advances in operative surgery have been in abdominal surgery; although some surgeons have asserted that they have abandoned Listerism, forgetting that Listerism is a treatment of wound-surroundings more than the treatment of the wounds. The statistics of ovariotomy are remarkable. Dr. Clay's statistics, published in 1871, were two hundred and twelve recoveries to one hundred and eighty-seven deaths. Knowsley Thornton, in 1890, gives his mortality—under the antiseptic system—at two per cent. The success also of Cæsarian section at the present time is better than it was ever expected to be even fifteen years ago, and now Porro's operation is being discarded for the less serious operation of suturing the uterus after the operation. Again, craniotomy is being discarded for the modern Cæsarian section; surgeons being encouraged by such success as that of Cameron, who had twenty-two consecutive cases of the operation without a death. Our surgery, too, to-day is limited not so much by the delicate anatomical structures and relations of a particular organ, as by the physiological work which it has to perform. Thus, we cannot operate upon a kidney when we suspect the opposite one to be diseased; and again, although tumours may be removed from the surface of the brain, yet such parts as the medulla and central portions of the brain must not be interfered with. Here it may be noted that there are some organs which can be removed more easily when their anatomical relations are abnormal; for instance, movable spleen and a prolapsed uterus. This latter operation can be performed easily by the abdominal method; whereas if it be attempted upon the normal cadaver, it is impossible to leave the stump intact. So again the operation for removal of the thyroid gland is much more easily accomplished when the gland is of large size and its anatomical relations to a certain extent altered. To remove a normal thyroid gland would be much more difficult. Although many operations are now performed which were never thought of fifteen years ago, yet amputation of limbs is much less frequently employed now than it was formerly. We excise

joints that are diseased in preference to amputating the limb, and this is only possible in consequence of the introduction of antiseptics. Thus Saxtorph found that the mortality after excision sank from 33 per cent. to 3 per cent. as a consequence of the practice of antiseptic surgery. Again, many compound fractures are now treated by conservative measures where formerly amputation was the only possibility of saving the life of the patient antiseptically. Further, osteotomy for deformity has been proved as safe as subcutaneous tenotomy.

One of the most striking changes in surgical treatment is that of tuberculous abscesses, empyema, psoas abscess, and the like. The old method of incision and drainage, with more or less imperfect washing out of the abscess cavity, was a grim failure. It often led to rapid death from septicæmia or pyæmia; and when it did not, the suppuration continued and the abscess was said to degenerate into a sinus. So bad were the results that many of the most experienced surgeons refused to operate at all, and left the abscess to burst; for they recognised that where they could not interfere with advantage, it was at least their duty not to hasten their patient's death by an operation. So in a less formidable malady—namely, tuberculous glands—the old method only slightly anticipated Nature; whereas now, once the disease is recognised, the whole of the glands suspected to contain the tubercle bacilli are removed.

Perhaps another of the more recent improvements in surgery is the operation of suprapubic lithotomy, which now entirely supersedes any other operation in the adult; and I think, even in children, it will ultimately be thought the best operation, on account of not injuring important organs at the neck of the bladder. The result to be wished for, and which the surgeon should endeavour to obtain, is to remove the calculus with as small an incision into the bladder as possible, afterwards to suture the viscus with buried catgut and close the abdominal wound in the usual manner, the after-treatment and recovery of the patient being perfectly straightforward.

Having mentioned catgut to be used in this manner, a glance on passing at the history of the use of catgut may be interesting. Galen, Ambrose Paré, and Sir Astley Cooper all used the catgut

ligature; but it was not until antiseptic surgery was firmly established that catgut could be used as an organising ligature and also as a buried suture, for in a septic wound it simply acts as an irritant and the wound does not heal till it has ulcerated out. Those who have commenced surgical work during the last twenty years have no idea of the extent of our gain in this respect. They may partly imagine, but cannot realise, the want of such an aid as a suture which can be used for bringing together the deep structures in a wound and closing the wound over them. Just to give an instance of its use in the oldest of operations—say, amputation of the thigh in the case of a child or delicate young adult, for disease where the periosteum, with the muscles attached, tends to strip off the bone like a glove off a finger—what trouble often arose in keeping the end of bone covered! Now we can rectify this by putting stitches into the periosteum and drawing them together over the bone, or by the purse-string suture. Silk, of course, can be used, but then it has to become isolated, it is never organised, and the knot frequently becomes a mechanical irritant. Silk in the abdominal cavity is quite satisfactory, on account of the ample room there is for its isolation.

With regard to those cases that are already suffering from erysipelas, septicæmia, pyæmia, or puerperal fever when first seen by the surgeon, up till now all that could be done was to maintain the strength of the patient and allow the disease to be fought out. But now we seem able to hope that not only can we prevent septic disease occurring, but that we shall be able to cure it when it does occur. Since this paper was commenced, there has been a communication sent to the *Surgical Review* of Paris describing an antistreptococcic serum capable of arresting the numerous forms of infection caused by streptococci. About three years ago it was shown by Roger that cultures of streptococci contain two antagonistic substances, one of which diminishes, whilst the other increases, the resistance of inoculated animals. The former is destroyed by heat, so that with a culture raised to a temperature of 230° F. animals can be vaccinated against streptococcic infection. The serum of animals thus treated acquires the property, not of destroying, but of attenuating,

the microbes which are introduced into them, and of checking infection set up by virulent cultures. Serum taken from a mule which had been extensively injected with sterilised cultures was used on a woman suffering from puerperal fever. After unsuccessful injections of 8 and 16 c.cm., a third injection of 25 c.cm. on the third day was followed by defervescence and rapid recovery. Three other cases of recovery have been reported by Charrin and Roger at the Biological Society of France. The prospects of success in this direction are favoured by the fact that Marmorek, another and independent investigator, has recently recorded a series of 45 cases of erysipelas in which the patients rapidly recovered after the injection of specially-prepared serum. Jacquot has since this communicated the case of a woman attacked by puerperal septicæmia in which intra-uterine injections and quinine were without effect. He then injected Roger and Charrin's antistreptococcic serum. After three injections of the serum the patient seemed well.

I cannot close this poor attempt to indicate the main course of the advance of surgery in the last twenty-five years without once more reiterating that it is to one master-mind that we owe the greatest impulse that surgery has ever felt. We cannot help feeling a special pride that the name that shines with an unrivalled splendour on the page of surgical history is that of the Englishman, Joseph Lister; and although this is not a University gathering, it is well to remember that Harvey was Warden of Merton College, Hunter commenced his education at St. Mary's Hall in Oxford University, and that Pasteur and Lister have received the honorary degree of D.C.L. in the University of Oxford.

On his retirement from King's College Hospital, Sir Joseph Lister was presented on July 31st with his portrait. Sir John Erichsen, in making the presentation, referred to the enormous progress which had been made in surgery, mainly owing to the introduction of antiseptic surgery, a boon which had made Sir Joseph Lister one of the greatest benefactors of mankind. Sir Joseph, who was very warmly received, sketched the steps which had led him to enunciate the theory of the antiseptic treatment of wounds. It had been to him one of the chief joys of life to impart to students the principle of the noble and beneficent art of surgery, and he was extremely gratified by the testimonial which had been presented to him that day by past colleagues and pupils, proving, as it did, that his efforts had not been altogether in vain.

A Committee has been formed to present a portrait of Sir Joseph Lister to the Royal College of Surgeons of England.

ON THE LOCALISATION OF THE FORAMINA AT THE BASE OF THE SKULL.

BY

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IF I mistake not, the foramina at the base of the skull have at all times proved more or less of a bugbear to students of medicine; and there are, perhaps, many reasons why they should, and should have done so; for with the exception of the foramen magnum they are comparatively small in size, and they are, moreover, crowded into a small space. It is not possible for a student to see them properly at the distance allotted him in the lecture theatre, nor, unless the class be a very small one, is it always possible for the teacher to demonstrate each foramen to every member of the class. To a certain extent he gets over the difficulty — if he be a good draughtsman—by drawing a diagram. If not a good draughtsman, he perhaps has recourse to some diagram specially drawn for him. If not the possessor of that, he delivers his lecture, passing during the time a whalebone bristle through various foramina, and by the time he has finished has probably left his audience in a complete muddle, though not without inspiring its members with a feeling of respect—even awe—for the base of the skull. He may, perchance, have succeeded in instilling into the mind of at least one student the idea that the œsophagus passes through the foramen magnum! Little wonder is there that the student who passes his elementary examination on osteology after having the "hard luck" to be examined on the base of the skull, is looked up to by his fellow students as being something out of the common; little wonder that he has more respect for himself. But, the same man who is able to recognise these foramina when he sees them may be utterly at sea when asked to write down their relative positions with even tolerable accuracy.

If it be a difficult matter for the student in harness, how

much more difficult must it be for the almost unavoidably rusty practitioner who, through the circumstances of practice, is unable to keep himself in touch with all his former studies!

To meet these difficulties is the object of this paper. The methods described in it have for some time been used by me in teaching my own students, with the most gratifying success; and it is my desire that they may meet with the same success whenever, wherever, and by whomsoever they are used.

If we examine the inferior aspect of the base of the skull we are at once struck with the number of foramina in it, and, moreover, if we compare it with a plate such as is exhibited in any book on Osteology with a view to learning the names and positions of these foramina, we soon find that we have set ourselves a formidable task. But the burden of that task is very much lightened if it occur to us to systematise the work. That work is rendered less irksome when it is pointed out to us that the foramina and, in addition, the main objects of interest at the base resolve themselves into antero-posterior rows. Many of these, for instance, lie in the middle line, along a line drawn from the interval between the central incisor teeth in front and the external occipital protuberance behind.

Many lie in a line drawn backwards and outwards between the posterior palatine foramina and the posterior condyloid foramen.

Many lie along a line drawn from the base of the external pterygoid plate of the sphenoid to the middle of the posterior wall of the posterior lacerated foramen, and thence continued outwards to the interval between the mastoid process and the external auditory meatus.

As the skull is for all practical purposes bilaterally symmetrical, it follows that these lateral rows of foramina, etc., are present on both sides of the middle line, so that the main objects at the base of the skull as seen from the exterior resolve themselves into five rows—namely, one median and therefore single row, and two pairs of lateral rows.

It is convenient to call the line running through the median row of objects, the *Sagittal Line:* concerning the two lateral lines it is convenient to speak of the internal as the *Internal*

Pterygoidean Line, because it commences just in front of the internal pterygoid plate of the sphenoid and soon runs through it; the external lateral line commences at the base of the external pterygoid plate of the sphenoid, and may on that account be termed the *External Pterygoidean Line*. These latter lines are paired. We have thus located five antero-posterior lines on the base of the skull, two of which are paired, which reduces the number to three, viz.:—

1. Median or Sagittal (1). Fig. 2 A.
2. Internal Pterygoidean (2). Fig. 2 B.
3. External Pterygoidean (2). Fig. 2 C.

Of course these lines are all imaginary ones. Let us now prove the value of them, beginning with the sagittal line.

The *Sagittal Line* (Fig. 1, and Fig. 2; A), as has been said before, is drawn backwards from the interval between the central incisor teeth to the external occipital protuberance.

It can with great advantage be divided into fourths, the anterior or first fourth lies on the hard palate reaching behind to the tip of the posterior nasal spine (Fig. 2; β); the second fourth bridges the interval between the posterior nasal spine and the middle of the anterior wall of the foramen magnum; the third fourth bridges the foramen magnum itself, and the posterior fourth extends from the middle of the posterior wall of that foramen to the external occipital protuberance (Fig. 2; κ).

The anterior fourth may be roughly divided into three parts, and just in front of the junction of its anterior and middle thirds we find the anterior palatine canal (Fig. 2; Aα), which, as is well known, is made up of four parts—two lateral, the canals of Stenson, and two antero-posterior, the foramina of Scarpa. At the junction of the middle and posterior thirds we find the maxillo-palatine suture, and at the posterior end of this hindmost third is the posterior nasal spine (Fig. 2; Aβ).

The anterior fourth of this sagittal line is thus seen to cut through from before backwards, the anterior palatine canal, the maxillo-palatine suture, and the posterior nasal spine.

The second fourth may also be divided into thirds, but in doing so we must look vertically over it. When we do this we

see that the anterior third covers the vomerine part of the nasal septum the middle third the basi-sphenoid and the posterior third the basi-occipital, and we see besides that the posterior third cuts through the pharyngeal tubercle (Fig. 1.

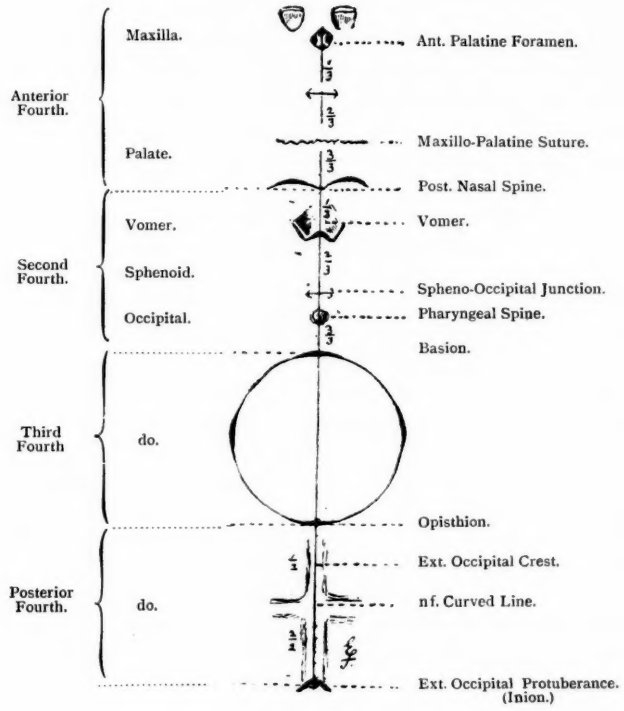


Fig. 1.

MEDIAN or SAGITTAL LINE. $\frac{2}{3}$

Fig. 2; Aγ) of the occipital bone about half an inch in front of the foramen magnum.

The third fourth bridges the foramen magnum (Fig. 1. Fig. 2; Aδ), dividing it into two halves and connects the basion (Fig.

1. Fig. 2; Aγ^1) in front with the opisthion (Fig. 1. Fig. 2; Aδ^1) behind. The hindmost fourth extending between the middle of the posterior wall of the foramen magnum (opisthion) in front, and the external occipital protuberance (inion) (Fig. 1. Fig. 2; Aκ), behind is bisected by the emergence from it of the inferior curved lines (Fig. 1. Fig. 2; Aθ) of the occipital bone, and it may be said to correspond with the external occipital crest (Fig. 1. Fig. 2; Aη). If we now summarise and tablify the above remarks, we say that the sagittal line cuts through from before backwards.

Anterior quarter	1. The anterior palatine canal	Maxilla.
	2. The maxillo-palatine suture	Palate.
	3. The posterior nasal spine ...	
Second quarter	4. The vomer	Vomer.
	5. The basi-sphenoid	Sphenoid.
	6. The basi-occipital with pharyngeal tubercle	Occipital.
	7. The basion.	
Third quarter	8. The foramen magnum.	
	9. The opisthion.	
Posterior quarter	10. The external occipital crest with the inferior curved lines starting on each side from it.	
	11. The external occipital protuberance or inion.	

See Fig. 1.

We now turn to the lateral lines, and may first examine in detail the internal lateral or internal pterygoidean line (Fig. 2; B).

The *Internal Pterygoidean line* (Fig. 2; B) extends backwards and outwards from the posterior palatine canal (Fig. 2; A) to the posterior condyloid foramen (Fig. 2; F). It may be divided conveniently into thirds. The anterior third cuts through two bones, the palate and the sphenoid (internal pterygoid plate). The middle third cuts through the petrous part of the temporal bone, and the posterior third cuts through part of the occipital bone.

The anterior third commences in the posterior palatine canal,

soon cuts through the accessory palatine canals (Fig. 2; A), and then the internal pterygoid plate of the sphenoid (Fig. 2; B) with the base of the hamular process; at the root of the pterygoid plate it cuts through the pterygoid tubercle, under cover of which

Fig. 2. $\frac{2}{3}$

A. SAGITTAL LINE, along which are—

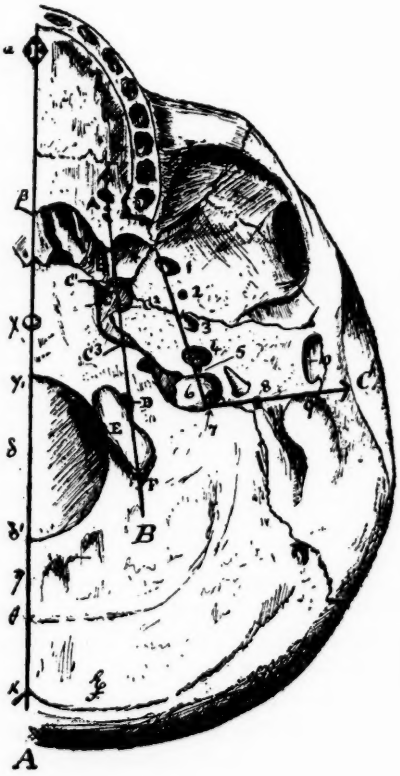
- α. Anterior Palatine Canal.
- β. Posterior Nasal Spine.
- γ. Pharyngeal Tubercle.
- γ'. Basion.
- δ. Foramen Magnum.
- δ'. Opisthion.
- η. External Occipital Crest.
- θ. Inferior Curved Line of Occipital Bone.
- κ. External Occipital Protuberance.

B. INTERNAL PTERYGOID LINE.

- A. Posterior and Accessory Palatine Canals.
- B. Internal Pterygoid Plate.
- C. Foramen Lacerum Medium.
- C^1. Vidian Canal.
- C^2. Carotid Canal.
- C^3. Petro-Occipital Fissure.
- D. Anterior Condyloid Foramen.
- E. Condyle.
- F. Posterior Condyloid Foramen.

C. EXTERNAL PTERYGOID LINE.

- *. External Pterygoid Plate.
- 1. Foramen Ovale.
- 2. Foramen Spinosum.
- 3. Eustachian Tube.
- 4. Carotid Canal.
- 5. Jacobson's Foramen.
- 6. Posterior Lacerated Foramen and Jugular Fossa.
- 7. Arnold's Foramen.
- 8. Stylo-Mastoid Foramen.
- 9. Auricular Fissure.
- 10. External Auditory Meatus.



is the posterior end of the Vidian canal (Fig. 2; C^1), and terminates in the large, jagged foramen lacerum medium (Fig. 2; C).

The middle third commencing in this middle lacerated foramen cuts almost immediately on its way backwards the

upper end of the carotid canal (Fig. 2; C^2) which opens into the outer wall of the foramen lacerum medium; behind that, at a distance of half an inch it crosses the petro-occipital fissure (Fig. 2; C^3), when the posterior third takes up the running.

The posterior third, commencing in the petro-occipital suture, almost at once cuts through the anterior condyloid foramen (Fig. 2; D), after which it crosses the condyle of the occipital bone (Fig. 2; E), and terminates in the posterior condyloid foramen (Fig. 2; F). We may summarise and tablify thus:—The internal pterygoidean line cuts through from before backwards.

Anterior Third	1. Posterior palatine canal ...	Palate.
	2. Accessory palatine canals ...	
	3. Hamular process	Sphenoid.
	4. Internal pterygoid plate ...	
	5. Pterygoid tubercle	
	6. Vidian canal	
	7. Foramen lacerum medium	
Middle Third	8. Carotid canal (upper and inner opening)	Temporal.
	9. Petrous—temporal	
Posterior Third.	10. Petro-occipital suture ...	Occipital.
	11. Anterior condyloid foramen	
	12. Occipital condyle	
	13. Posterior condyloid foramen	

The *External Pterygoidean line* (Fig. 2, C), as we have seen, commences at the base of the external pterygoid plate of the sphenoid (Fig. 2; *), and passes backwards and outwards to the middle of the posterior wall of the foramen lacerum posterius (Fig. 2; 6), when it turns outwards to the interval between the external auditory meatus and the mastoid process (Fig. 2; 9).

This line, like the last, may be roughly divided into thirds; viz., anterior, middle, and external.

The anterior third, commencing at the root of the external pterygoid plate of the sphenoid, at once cuts through the inner side of the foramen ovale (Fig. 2; 1), then the foramen spinosum (Fig. 2; 2), then the spine of the sphenoid, behind which it ends in the osseous Eustachian tube (Fig. 2; 3), having covered

the great wing of the sphenoid bone. The middle third, commencing at this Eustachian tube, crosses the petrous temporal, cutting through immediately behind the Eustachian tube the outer and lower opening of the carotid canal (Fig. 2; 4), then a plate of bone separating that canal from the jugular fossa and the posterior lacerated foramen, and in that plate it cuts through the foramen through which Jacobson's nerve emerges (Fig. 2; 5), (Jacobson's foramen), and terminates in the posterior wall of the posterior lacerated foramen (Fig. 2; 6), whose inner bay transmits the inferior petrosal sinus, middle bay transmits the 9th, 10th, and 11th cranial nerves, and whose outer bay transmits the lateral sinus.

The external third, commencing at the middle of the posterior wall of the posterior lacerated foramen, and terminating between the mastoid process and the external auditory meatus, follows the line of the petro-mastoid suture. It cuts through the jugular fossa (Fig. 2; 6), and in its outer wall the foramen for Arnold's nerve (Fig. 2; 7), after which it cuts through the stylo-mastoid foramen (Fig. 2; 8), and lastly the auricular fissure (Fig. 2; 9). The external pterygoidean line thus cuts through on its way backwards and upwards:

Anterior Third	1. The base of the external pterygoid plate	Sphenoid.
	2. The foramen ovale	
	3. The foramen spinosum	
	4. The spine of the sphenoid... ...	
Middle Third	5. The Eustachian tube and canal for tensor tympani muscle	Temporal.
	6. The carotid canal (lower and outer opening)	
	7. Plate of bone between carotid canal and posterior lacerated foramen, containing Jacobson's foramen...	
External Third	8. The posterior lacerated foramen.	
	9. The jugular fossa.	
	10. The stylo-mastoid foramen.	
	11. The auricular fissure.	

In all cases these lines are drawn without regard to the

contour of the base of the skull. It is essential to keep this in mind. Thin wires stretched between the rallying points answer well. The median line is six inches long on the average; the internal pterygoidean is three inches long; and the external pterygoidean in its anterior two-thirds is two inches, in its external one-third one inch long. These are, of course, average measurements.

ON THE DIAGNOSIS OF CANCER AND OF SIMPLE DILATATION OF THE STOMACH.

BY

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In the diagnosis and treatment of gastric disorders, the value of a systematic examination of the contents of the stomach at various stages after the ingestion of a test meal is now generally admitted. The large amount of work on this subject that has been done in the last few years has added greatly to the knowledge of the processes occurring during digestion, both in normal and in pathological states of the stomach. The earlier researches seemed to indicate that free HCl was absent from the gastric juice in cases of gastric cancer, and this absence of free HCl was held to be pathognomonic of cancer; but it has now been shown that HCl may be absent from the stomach in many other conditions, *e.g.* the acute fevers, chronic gastritis, and atrophy of the gastric mucous membrane. It is still true, however, that free HCl is far more frequently absent in cancer than in any other disease of the stomach. Without going fully into the literature, I may quote some recent observations by Schüle,[1] who found that in 88 cases of cancer of the stomach HCl was present in the gastric contents in 10, and sometimes absent,

[1] *München. med. Wchnschr.*, 1894, p. 737.

sometimes present, in 5 more; in the rest—83 per cent.—it was absent. In 21 cases of cancer examined by Ewald, HCl was absent in all. Schüle cites the results of the examination of 210 cases of non-malignant diseases of the stomach by Wagner: in 33, or only 15 per cent., HCl was absent. Further, when HCl is present in cases of cancer, it is in greatly reduced amount, on the average less than half of the normal. Salzer,[1] however, gives a higher percentage than most other observers for the absence of HCl in non-malignant stomach disorders. Out of 97 cases of chronic gastritis and nervous dyspepsia, HCl was absent in 35. In 4 cases of cancer, it was absent in all.

Since the work of Boas much attention has been paid to the question of the presence of lactic acid during digestion in cancer of the stomach. It is now considered that the only acid secreted by the gastric glands is hydrochloric, and that lactic acid arises from the fermentation of carbohydrates in the food. It is always present during the first 30–45 minutes of digestion after carbohydrates have been taken. Boas showed that all the test-meals contain lactic acid or its salts. Hence he gives simply oatmeal water gruel, and insists on the importance of a preliminary washing-out of the stomach. He also describes a more elaborate test for lactic acid than Uffelmann's reagent. Working in this way, he found lactic acid to be absent in normal digestion and generally in non-malignant disorders of the stomach, whilst it was constantly present in considerable quantity in 20 out of 21 cases of cancer. These results have been confirmed by others. The following statistics are taken from a valuable paper on "The Early Diagnosis of Cancer of the Stomach," by Dr. Morris Manges.[2] Cohnheim found lactic acid present in 9 out of 10 cases of gastric cancer, in 4 cases of œsophageal cancer; whilst it was absent in 6 cases of dilatation of the stomach, and in 14 cases of advanced chronic gastritis, in which HCl was also absent. Ewald found large quantities of lactic acid in 22 out of 24 cases of cancer of the stomach, and, on the other hand, Strauss found it present in only 5 out of 129 cases of non-malignant gastric diseases.

[1] *Johns Hopkins Hosp. Bull.*, vol. iv., 1893, p. 121.
[2] *Med. Rec.*, vol. xlvii., 1895, p. 518.

In a recent paper Boas[1] reaffirms his former statements, remarking that Uffelmann's test is not very sensitive, and that care must be taken to exclude lactic acid from the test meal. Dr. Manges, however, thinks that Uffelmann's test is sufficiently delicate for clinical purposes; other more elaborate tests take too much time for practical clinical work. The lactic acid may be taken up from the gastric juice by agitation with ether, and the latter evaporated, or a little of the ether extract directly added to the test. The general result of all researches on the gastric contents in cases of cancer of the stomach is to show that if in any case of gastric disorder HCl is found absent on several examinations at different intervals of time after a test meal, and at the same time lactic acid is present in considerable quantity; whilst there is stagnation of the stomach contents, the diagnosis is strongly in favour of cancer, even if there is no palpable tumour.

In the clinical examination of the gastric contents it is necessary that the tests employed should be fairly simple, easy of application, and not consume too much time in carrying out. Very useful information on the mode of procedure, mostly derived from the work of Martius and Lüttke, is given in Prof. Gamgee's *Text-book of the Physiological Chemistry of the Animal Body*.[2]

I may briefly recapitulate a useful method of work, taken chiefly from the above. The acidity is determined with phenolphthaleïn as an indicator, which, according to Martius and Lüttke, only indicates the acid reaction, and not the presence of free acid, which latter is determined by the use of Congo red papers. Congo red, however, will not show whether we have to do with mineral or organic acid. Gunzberg's reagent determines this, as it reacts only to a mineral acid. I have also used Benzo-purpurin papers, but find them a less delicate and certain test than Gunzberg's reagent. Uffelmann's reagent is used for lactic acid, preferably after extraction of the gastric juice with ether. Finally, the gastric contents are tested for peptones and sugar, and a little put aside in a warm place with some small cubes of hard-boiled white of egg to test its digestive powers.

[1] Abstract in *Centralbl. f. innere Med.*, 1895, p. 610.

[2] Vol. ii., 1893, p. 495, *et seq.*

I have also used Gunzberg's test as a quantitative one for HCl. Martius and Lüttke recommend that the gastric juice should be tested unfiltered.

It is important that the stomach should be emptied before the test meal is given. I have more than once found presence of lactic acid and absence of HCl on examination of a case of dilated stomach in which this had not been done, and in which the stomach contained stagnated fermenting material; whilst a subsequent examination after previous lavage showed the presence of HCl in normal quantity, and absence of lactic acid. In cases of dilatation of the stomach it is often interesting to note how the gastric juice improves in the quantity of HCl present, and in peptic power, during treatment by regular washing-out of the stomach and the administration of a proper diet. It is hardly necessary to say that more than one examination should always be carried out, and that no reliance can be placed on the examination of vomited matters. The cases examined, which were carefully investigated, were 23 in number; the number of examinations carried out was 62. I am indebted to my former clinical clerks, Mr. W. P. Taylor, Mr. J. W. Rose, and Mr. W. T. Lydall, for help with them.

Of these, 8 were cases of gastric cancer, in which the diagnosis was confirmed either by necropsy or by the appearance of a palpable tumour. In all HCl was constantly absent: lactic acid was present in 6, generally in considerable amount. This point was not investigated in 2 of the cases. In 10 cases of non-malignant dilatation of the stomach, HCl was present in all, lactic acid in 4 cases constantly, only occasionally in 1, and in 1 case it was not tested for. Except, however, in a few of the cases examined lately, special care was not taken to exclude carbohydrates and lactic acid from the test meal, so that the above results can only be taken to show that under such conditions lactic acid is more frequently present in cases of cancer than in non-malignant gastric affections. The other cases included one of a cancerous growth in the great omentum, not involving the stomach. In this case HCl was present, lactic acid absent. In a case of ulcer of the stomach in a girl the total acidity was 60, hydrochloric acid present in small amount,

a faint reaction for lactic acid, and butyric acid present on three occasions, apparently in considerable amount.

It may be stated that in this paper, following the suggestion of Ewald, the total acidity of the gastric contents is expressed by the number of c.cm. of decinormal caustic soda solution requisite to neutralise 100 c.cm. of it. In a case of the common form of dyspepsia occurring in chlorosis, the acidity of the gastric contents was 20, 60, and 83. HCl was present on the first and third occasions, on the second it was absent. The tests were made one hour, 1½ hours, and two hours after food respectively. Dr. K. Osswald[1] has found that in dyspeptic troubles in chlorosis there is generally deficient HCl. As a matter of practical experience, I have found that only in a minority of cases is relief of the dyspeptic symptoms obtained by the administration of HCl after meals.

In one case of gastralgia HCl was persistently absent from the gastric contents. The patient was a man aged 53, who was admitted into the hospital on several occasions with constant nausea and intense pain in the epigastrium, relieved by vomiting, which took place soon after any food was taken. No dilatation of the stomach was ever made out. The pain was agonising in severity. The patient had been a heavy drinker. There was no evidence of ulcer of the stomach. The long duration of the case, and the fact that he has remained well for twelve months since his last stay in the hospital, preclude cancer. Lactic acid was found in the gastric contents once only, and, as said above, HCl was absent on all occasions, the examinations being made at varying times after a meal.

Returning to the cases of cancer, the average duration of the illness was about two years. Patients appear to come to the hospital late in the illness, as in several of them symptoms had been present for a year before admission. It is not common to find a history of long antecedent dyspepsia in cases of gastric cancer, but in one man there had been symptoms of dyspepsia for five or six years previous to the discovery of a tumour at the pylorus. In one case presenting the typical symptoms of cancer at the cardiac end of the stomach, the results of ex-

[1] *München. med. Wchnschr.*, 1894, p. 557.

amination of the gastric contents were of great aid in the diagnosis, as during life no tumour could be felt; at the necropsy a tumour the size of a large orange was found at the cardiac end, around the opening of the œsophagus.

In two cases of cancer, peritonitis occurred without perforation shortly before the fatal termination. I have not been able to find other instances of this complication of gastric cancer, which must be a rare one apart from perforation of a malignant ulcer. The first patient, a man aged 75, had been ill for two years with gastric symptoms, and on admission a rounded tumour was felt to the right of and just above the umbilicus; this was recognised as a pyloric tumour. He emaciated and grew slowly worse, but without obvious cause was one day seized with a rigor; his temperature went up to 102·6°, and he complained of great pain and tenderness over the tumour. He died the next day, and the necropsy disclosed a large mass of new growth at the pylorus. Over the growth the peritoneum was thickened and covered with a layer of lymph, the fat was indurated, and the liver and under surface of the diaphragm were coated with recent lymph. The inflammation was confined to these situations. No perforation was found, but the growth in one place was excessively thin, and here the most marked changes in the peritoneum occurred.

In a second case of pyloric cancer, in a collier aged 61, peritonitis without perforation also occurred, the peritonitis being here general, and there was also purulent effusion into the left pleural cavity.

Of the cases of dilatation of the stomach, 8 were men and 3 women. The ages varied from 18 to 60 years; in 6 it was between 45 and 60 years. With the possible exception of cases of chronic ulcer with much thickening, giving rise to a palpable tumour, no gastric disorder gives rise to greater difficulty of diagnosis from cancer than simple chronic dilatation of the stomach in elderly persons; and it is precisely in this disease that the examination of the gastric contents gives such valuable means of attaining an exact diagnosis. To take an instance, a woman aged 59, was admitted complaining of pain after food, constant nausea, vomiting after food, flatulence, constipation,

and loss of flesh. She was pale and thin; the stomach was greatly distended, with areas of marked tenderness over the ensiform cartilage, in the right epigastrium, between the shoulders, and at the angle of the left scapula. The tender area over the vertex of the skull described by Dr. Head[1] as associated with stomach disorder was well marked, and pressure on this spot gave rise to pain in the epigastrium. The age, emaciation, and general symptoms strongly pointed to cancer of the stomach; but examination of the gastric contents invariably showed the presence of HCl in normal or excessive quantity, and absence of lactic acid. For a time she did not mend, but then began to improve slowly; and after three months' treatment she was cured, had put on flesh, and the stomach had returned to its normal size.

One patient aged 56, who had suffered from dyspepsia of twelve years' standing, due to a dilated stomach, had five years before undergone a novel cure. He was advised to take a sea-voyage, and was violently sea-sick for some days, and after this remained free from dyspepsia for fourteen months. The sea-sickness presumably acted by thoroughly emptying the stomach of its stagnating contents. He went out of the hospital quite free from symptoms after three weeks' treatment by washing out the stomach.

In a man aged 60, dilatation of the stomach was of the rare form produced by the cicatrisation of a healed ulcer in the region of the pylorus. Five years previous to his fatal illness he was under my care with well-marked symptoms of gastric dilatation, and obtained much relief from washing out the stomach. After leaving the hospital he procured a tube, and had been in the habit during the whole time of passing the tube and emptying his stomach three or four times every day. He had suffered from flatulence, great pain in the stomach, and vomiting after food for twenty years, the vomiting generally, but not always, relieving the pain. He had brought up a very large quantity of blood on two occasions, seven and nine years previously. He was re-admitted on Sept. 21, 1894, with the same dyspeptic symptoms as before, in a more aggravated form. He was pale and emaciated, heart and lungs were normal, the stomach was dis-

[1] *Brain*, vol. xvii., 1894, p. 339.

tended, and a splashing sound was easily obtained over it. The abdomen could be thoroughly explored, and no tumour was felt. There was marked myoidema in the pectoral muscles, and a "goose-skin reflex" at once appeared along the lines formed by drawing the finger-nail over any part of the abdomen. The epigastrium was marked transversely by eight or nine lineæ albicantes, due to frequent distension of the abdomen by the enormously dilated stomach. When distended the stomach seemed to occupy the whole of the left side of the abdomen, extending downwards almost to the pubes. The peculiar nodosities on the fingers described by Bouchard[1] as present in prolonged cases of dilated stomach were very well marked, much more so than I have ever seen in any previous instance, and consisted in an enlargement or nodosity of the base of the second phalanges at the first phalangeal joint, affecting all the fingers. Examination of the gastric contents: Total acidity, 100; HCl absent, or in faint traces ¾ hour after the test meal; at 1½ and 2½ hours after it, present in large quantity; lactic acid absent; gastric juice had active digestive properties.

The patient suffered much from sleeplessness and from obstinate constipation. He could not take milk in any form, peptonised or with lime and barley water, and indeed seemed very much worse and more uncomfortable when taking fluids. He was therefore put as far as possible on an absolutely dry diet of light digestible solids, with a tumbler of hot water night and morning. On this treatment, with lavage of the stomach every morning, he improved somewhat.

The history of the case and the symptoms pointed to a contracting ulcer as the cause of the dilatation. The question of dilating the pylorus was taken into consideration, but the patient died quite suddenly and unexpectedly during the night of Nov. 5th. At the necropsy the stomach was found to be very large, its coats much thickened, the mucous membrane a dull slate colour, coated with adherent mucus, with some ecchymotic patches along its lower border. About four inches from the pylorus on the posterior border was a healed ulcer the size of a threepenny piece, with some contraction of tissues around it.

[1] *Leçons sur les Auto-intoxications dans les Maladies.* Paris. 1887.

The pylorus barely admitted the little finger; its walls were thickened and tough; on the gastric side was a linear scar (old ulcer) in the middle of a small area of atrophied mucous membrane. There was here some puckering of the tissues, which was also visible externally. There was no new growth.

In cases of dyspepsia where dilatation of the stomach with stagnation of its contents is suspected it is, of course, very important to determine the length of time during which the food remains in the stomach. The administration of salol with determination of the interval after which salicyluric acid appears in the urine by the iron reaction was the method adopted in my earlier cases, but later researches have thrown considerable doubt on the accuracy of this test for the motility of the stomach, so that it can no longer be considered as a trustworthy one; and the modification of the test by taking the number of hours that elapse before salicyluric acid disappears from the urine does not seem any more satisfactory. Probably the best method is to pass a tube at an interval of time after a meal at which the stomach should have discharged its contents into the duodenum, and ascertain whether the viscus is empty. With regard to the etiology and treatment of non-malignant dilatation of the stomach, so much has been written of late on the subject that a few words will suffice. A history of long-continued dyspepsia gradually becoming worse is a marked feature in most cases. It is often also to be noted that the patient's muscular system is weak and flabby. It is probable that dilatation gradually ensues on repeated distension of the stomach from flatulent dyspepsia, its muscular walls being weak and atonic. In the treatment of the mildest cases of not long duration in young or middle-aged adults, a cure is often quickly effected by careful regulation of the diet, with mild aperients and ordinary dyspeptic remedies. In others a little more severe, this treatment should be preceded by a thorough washing-out of the stomach once or twice. One thorough emptying of the stomach is sometimes enough, with advice as to diet and the administration for a short time of a mixture containing hydrochloric acid and nux vomica, or subnitrate or subgallate of bismuth, to start the patient on the road to eupepsia. In the more severe cases,

especially in elderly people with more or less general debility, rest in bed for a time is essential to successful treatment. The time during which this rest is necessary varies, and must depend on the progress made. As a rule, from two to three weeks in bed is necessary. In these cases great benefit is derived from lavage of the stomach once a day; but it is not always necessary, and often need not be continued long. There is rarely difficulty about it; the patients soon learn to swallow a soft tube, and the relief to pain and distension obtained, which is often immediate, makes them appreciate it. In this case, "*il n'y a que le premier pas qui coûte.*" Sometimes, as in the case mentioned above, they learn to pass a tube for themselves, and may have to be prevented from using it too frequently. The best time for lavage is the morning, before the food for the day is taken. For cleansing the stomach warm boracic acid solution gives good results. It is not advisable to pour in too much at a time or the distension of the stomach may be kept up; 1–1½ pints is sufficient. As to diet, it is best to begin with small quantities of milk at frequent intervals, peptonised, or with the addition of saccharated lime-water, then to increase the quantity given at a time, and to lengthen the intervals, and to gradually add other light and nutritious articles of food until the patient slowly gets back to a full diet. When this is the case, he should keep to three meals a day only, take very little fluid at meal times, and a tumbler of hot water or other hot drink before breakfast and at night. Hot drinks are useful throughout treatment, as they promote contractility of the stomach. Some patients, however, do not do well on fluids, and are better treated almost from the first with a dry diet. In any case it is necessary for the patient to keep to a strict diet for a long time, eating only easily-digested food that does not contain a large indestigible residue, and being careful not to overload the stomach.

With regard to drugs, I have found a mixture containing strychnine, dilute hydrochloric acid, and chloroform water the most useful. Ipecacuanha, in doses of gr. ½–gr. ij., as recommended by French authors,[1] night and morning, is probably of service, and for the bowels, which are nearly invariably con-

[1] A. Mathieu, *Gaz. des Hôp.*, Fév. 5, 1888.

stipated, enemata, or a dose of a powder, also recommended in the above paper, composed of equal parts of acid tartrate of potassium, precipitated sulphur, and magnesia, will be found very useful.

In some cases the subnitrate of bismuth, with small doses of salicylate of soda, taken every three or four hours, gives more relief by checking abnormal fermentative processes. Faradisation of the stomach, which has been recommended, has not proved of much value in my hands. Most importance is to be given to rest, judicious regulation and variation of diet, with lavage in suitable cases, and the administration of suitable medicines for the relief of dyspeptic symptoms and of constipation. The result attained by these methods of treatment is generally very satisfactory.

THE ADMINISTRATION OF ETHER.

BY

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THE superiority of ether over chloroform as a general anæsthetic is now acknowledged by most anæsthetists, but opinions still differ as to the best method of administering it. The difficulties which have arisen in the production of ether narcosis have sometimes been so great, that discredit has been thrown upon this agent, and the more dangerous one—chloroform—has taken its place.

Believing that most of the difficulties associated with ether can be prevented, I am venturing to bring forward the method I have adopted in my last 400 cases, as I have found the results obtained by it are better than when I gave it in the usual way. The difference between the two consists in my using a more dilute vapour both in getting the patient under, and afterwards

during the progress of the operation. I do not in this paper intend to discuss the employment of nitrous oxide as a preliminary to ether. No doubt this does remove from the patient the initial discomfort of ether, but it is a method which requires a considerable amount of practice to change from one anæsthetic to the other without the patient coming round, and moreover, it necessitates a more complicated apparatus. Although it is now close on twenty years since Clover first introduced this combination of anæsthetics, it does not appear to have been taken up to any great extent by general practitioners. By the method I am about to describe, patients can, in the great majority of cases, be anæsthetised quietly, and I believe without feeling any great discomfort, by ether alone. Many of them, if asked after they have come round what the sensation of going under was, will answer they remember nothing about it.

Clover's inhaler is the one I always use. This apparatus is so well known that I need not describe it, but there is one part of it I should like to draw attention to; viz., the air bag, which is often made too small. The size I like best is that supplied by Messrs. Down Bros. on their inhaler. This has a fluid capacity of 120 oz.

In using this inhaler, it is the custom of many to rotate the ether reservoir until the indicator is at the letter F (full on) to get the patient under, and then to let the indicator point to the figure 2 for the remainder of the operation. I used to employ this method; but now I find it is easy, in 90 per cent. of my cases, to get good anæsthesia by rotating the reservoir until the indicator reaches the figure 2 for getting the patient under, and after that the indicator can be kept midway between 1 and 0. Although this is less ether than is generally given, I wish it to be understood that the resulting anæsthesia is a complete one. The cornea is insensitive, the muscles are relaxed, and there is an absence of all such reflex phenomena as coughing, vomiting, &c. Though there are not the same dangerous reflex symptoms seen with incomplete ether anæsthesia as in the same stage when chloroform is the anæsthetic, yet this condition should always be avoided. It is somewhat dangerous to the patient, as the vomiting or spasm of glottis may cause asphyxial trouble;

and struggling or rigidity of muscles interferes with the proper performance of the operation. In fact it is nearly always during incomplete anæsthesia that difficulties arise under ether.

Occasionally I meet with patients who require more ether than I have mentioned. These are nearly always strong muscular men, and frequently they have been alcoholics.

Method of Administration.—After 1½ oz. of ether have been poured into the reservoir, the indicator of which is at 0, the inhaler, without the air bag, is applied to the face. By telling the patient he is only having air he will breathe with more confidence, and soon get accustomed to the face-piece. After he has had five or six breaths in this way, the air bag can be fixed on to the inhaler. If the anæsthetist has not already blown out the bag, the face-piece must be raised at each inspiration, and lowered in time to catch the expiration; in this way the patient fills the bag with air himself. As soon as the bag has become *thoroughly* distended, keep the face-piece applied closely and let the patient have about six breaths to and fro into the bag; then begin to turn the ether reservoir slowly, keeping the face-piece applied all the time.

It should take from a minute to a minute and a half for the indicator to reach the figure 1. Up to this time the patient will most likely have been breathing in a quiet, rather hesitating manner; but now he suddenly begins to take deep breaths, showing that his air-passages have got accustomed to the ether, and he generally loses consciousness at this stage. Now the reservoir can be rotated rather more quickly until the indicator points to the figure 2, where it can be left in the great majority of cases: of course if the patient does not go under with this, more ether must be turned on; but as I have already said, I find this sufficient in 90 per cent. of my cases. The time required to get a patient under from the moment I commence to turn on the ether varies from two and a half to four minutes. The indicator is kept at 2 for five minutes, so as to get the patient well under the influence of the ether. It is then turned back to 1 for another five minutes, and after that it can be kept midway between 1 and 0 until the operation is finished.

Now another very important factor in the production of

ether anæsthesia has to be considered; viz., the air supply. During the time the patient is going under, it is essential that the air supply be limited to a considerable extent. It is by allowing too much air at this stage that most of the difficulties connected with ether are brought about. As a rule it is not necessary to allow any fresh air from the time the ether is first turned on until the breathing begins to get stertorous—a period of from two to three minutes—but for this result to be obtained, the bag must have been quite full of air when the ether was begun, and the larger size bag has a great advantage over the smaller one.

Directly the breathing begins to get stertorous, showing that the patient is nearly under, one breath of air may be given; but if many are given, the patient rapidly begins to come round. One breath will be sufficient to carry him on until the corneal reflex is lost. By this time his face will have a flushed appearance, and it may be a little dusky; but this need cause no anxiety, for now a few breaths of fresh air may be given until the face regains its normal colour. After complete narcosis has been induced, the anæsthetist must allow enough air to prevent any cyanosis, and on the other hand he must limit it sufficiently to prevent the patient coming out of the anæsthesia. Since patients vary so much under anæsthetics, it is almost impossible to lay down any rule with regard to the amount of air to allow. Not only is there a great difference between different patients, but the same patient varies according to the length of time he is under the anæsthetic. For instance, the quantity of fresh air that should be given to the patient after he has been under the anæsthetic for, say, an hour would be quite incompatible with good anæsthesia in an early stage of the administration. Generally speaking, one breath in eight or ten is all that can be allowed for the first twenty minutes, after that, one in every five or six may be given; but all kinds of variations will be met with, and the only real guides are the degree of anæsthesia and the colour of the patient's face. So long as there is no cyanosis we may rest assured that the patient is being allowed sufficient air, and by using a less concentrated vapour of ether there is less tendency to duskiness than when a strong one is given.

I think it is best to give the ether slowly at the beginning of the administration, because by this means the patient's mind becomes dazed before the vapour is sufficiently strong to cause discomfort. When a strong vapour is commenced with, it may bring about spasm of the glottis, which produces that horrible sensation of suffocation of which patients complain. In the hands of experts this method may be employed satisfactorily; but when I have seen it attempted by beginners it has frequently been the cause of great trouble—producing holding of breath, coughing and retching, and where the patient has been a powerful muscular one it has ended in complete failure.

There are one or two interesting points connected with this method of maintaining anæsthesia. Generally there is a less copious secretion of saliva and mucus. This is perhaps one reason why there is less cyanosis. The air passages are not irritated so much as by the stronger vapour, and so that excessive accumulation of mucus in the trachea, which sometimes causes trouble, is less likely to take place. Also, the pupil is a smaller one (about 2½ mm.): this does not mean that the patient is not under sufficiently, for there is an absence of all signs of incomplete anæsthesia; neither is it due to the asphyxial element having been carried too far, for during the early part of the administration, when the indicator is at 2 and the air-supply limited, the pupil is moderately dilated. The contraction occurs later on, when the indicator is turned back and the patient is having a good supply of air as shown by the normal colour of the face.

As far as I have been able to observe, the after-discomfort of the patient is less with this method. He comes round more quickly, there is less vomiting, and that disagreeable taste and smell of ether which some patients complain of so much passes off sooner. I think also this weaker vapour is less likely to produce after-affections of the air passages. When administered in this manner, ether can be safely given to children and to old people.

Progress of the Medical Sciences.

MEDICINE.

The recent meeting of the British Medical Association in London gives a convenient topic for our report, and, at the outset, it may be observed that the prevailing idea running through the various Presidential and general addresses, as well as the sectional discussions and papers, relates to the influence of micro-organisms and their products. This subject is necessarily the one which will chiefly occupy our attention. The President emphasised the fact that micro-biology and all that therein is, including the germ theory of disease, is not new, inasmuch as Harvey wrote on the scattering and propagation to a distance through the air of the seeds of epidemic, contagious, and pestilential diseases; and Sir Russell Reynolds further directed attention to the fact that microbes are not all pernicious in their action. He speaks of the beneficent microbe, and of the gradually-increasing appreciation of the fact that these lower forms of life exert, not necessarily mischievous, but, indeed, benignant influences on the human body, assisting normal functions, and even warding off the malign effects of other influences to which we are habitually exposed.[1]

Prof. Schäfer, in the address in Physiology, has placed before us a precise and lucid account of the action of products (not of bacterial origin but produced by chemical agencies in glands), and gives us the results of much good work which has recently been accomplished with regard to the production and neutralisation of toxins of internal origin.[2]

Sir William Broadbent, in the address in Medicine, after his excellent summary of the history of the growth of our art, and after having pointed out that the influence of both disease and therapeutics in the environment of the cell is a matter of chemistry, which must ultimately form the link between physiology, pathology, and therapeutics, further emphasises the fact that all vital actions are chemical actions, and that the key to therapeutics is to be found in the chemistry of vital processes; and then he rather hints that we may be carried away by fashion in medicine, and considers it to be inevitable that our imagination should be impressed by the revelation of the wonderful part which micro-organisms have been found to play in the genesis of disease.[3]

Dr. F. W. Pavy, the President of the section of Medicine, in his opening remarks, gave an outline of the history of

[1] *Brit. M. J.*, 1895, vol. ii., p. 263 [2] *Ibid.*, pp. 341, 373.
[3] *Ibid.*, p. 266.

microbes, toxins, and immunity. "It is," he said, "the toxin which leads to the generation of antitoxin, and toxin is produced by the bacillus, no matter whether it exists inside the system or is cultivated in a medium outside the body. Produced as the result of cultivation outside the body, it is susceptible of separation by filtration from the bacillus, and in this state the effect of its introduction into the system of one of the lower animals is to kill if used in sufficient quantity, and in smaller quantity to give rise to the production of antitoxin, which, with suitable arrangements, may be procured in a form to be susceptible of employment as a therapeutic agent."

* * * *

The discussion on Diphtheria and its treatment by antitoxin was opened by Dr. Sidney Martin, who, after a preliminary statement on the two methods of treatment previously in vogue —the one by means of local applications which would loosen or remove the membrane from the throat, the other by remedies which would act upon the general symptoms of the disease— proceeded as follows: "Diphtheria may be defined as a membranous inflammation of a mucous membrane, usually of the respiratory passages, due to the invasion of the bacillus diphtheriæ, which does not enter the body but forms poisons in the membrane, which produce general symptoms, fever, &c., as well as a palsy due chiefly to a nerve degeneration." The presence of nerve degeneration is here for the first time insisted upon as *the* pathological test of the presence of this disease. Other membranous inflammations of the throat may be due to micro-organisms, but diphtheria is the only one which leads to nerve degeneration. The pathological test of the poisons found either in the bodies of patients dead of diphtheria or formed by the bacillus diphtheriæ outside the body is not that they produce death, but that they produce nerve degeneration. This degeneration is then the final and most accurate test of the presence and action of the bacillus diphtheriæ. This being the essential point in the pathology of the disease, it is the foundation of the recommendation of the new remedy, antitoxin—a recommendation based on scientific principles established first in the laboratory and afterwards at the bedside. It is the function of the antitoxin to counteract the chemical poisons found in diphtheria, which are the cause of the nerve degeneration. These poisons are of two classes: one found in the membrane, the other in the tissues; and these differ in many respects. "The pathological process in diphtheria must be considered in the following manner. When the membrane is formed, the bacilli growing in it, especially near the surface, secrete a ferment which, when absorbed into the body, produces by acting on the proteids of the body digestive products, the chief of which belong to the albumose class. It is not that the body is poisoned by a single large dose and then the action stopped

(although this may occur in certain cases), but it is that numerous small doses are, in the course of the disease, absorbed into the system, and are gradually producing their effects."[1] The chemical poison found in the membrane is of the nature of a ferment: no analysis is possible, but it has a profound effect in an infinitesimal dose, and it produces the symptoms and the pathological changes found in diphtheria. The poisons found in the tissues of patients dead of diphtheria differ from the poison in the membrane. They are of two kinds, the most important belonging to the class of digested proteids; viz., albumoses. The effects of injection of toxin, antitoxin, and albumoses were described and illustrated, and finally it was pointed out that after the antitoxin treatment of animals there was no fatty degeneration of the heart. The investigation, of which the details were described, tended to show that the antitoxin serum is capable of counteracting to a great extent the poisons which are found in the tissues of patients dead of diphtheria.

The evidence given by Prof. Von Ranke, of Munich, was very powerfully in favour of the new treatment. His statistics showed that the mortality had been reduced from 56.2 per cent. to 17.7. Various other details were given, and the remarkable fact announced that intubation was never found to be necessary if not required within the first twenty-four hours of treatment. Prof. Baginsky, of Berlin, gave a similar record, the mortality under serum treatment having been reduced from 41 to 15.6 per cent. Dr. Campbell Hall stated that he would not feel justified in treating a diphtheria patient in any other way than by the serum method as long as serum could be procured. Other speakers were unanimously in favour of the new treatment, and Dr. Sims Woodhead maintained that, in view of the number of experimental and clinical facts brought forward, a high degree of enthusiasm was thoroughly justified.

The report on antitoxin treatment in Germany,[2] obtained by collective investigation, on a total of 10,312 cases occurring in a period of six months from October 1st, 1894, gives very striking results. Of the whole number 5,833 were treated with serum, and 4,479 without it. The proportion of deaths in the former group was 9.6 in contrast to 14.7 per cent. in the latter. In 401 cases of children under the age of 2 years in which the serum treatment was used on the first and second day the mortality rate was 11.8, in contrast with 39.7 where under similar conditions it was not used. Of 2,556 children between 2 and 10 years of age, the death-rate was 4 per cent. after toxin treatment, instead of 15.2 per cent. in the other group. Over 10 years of age only 1 per cent. in a series of 696 cases died after early treatment, the mortality in the other group being 3.7 per cent. Other results, of which details have been given, are uniformly in favour of the serum treatment.

[1] *Brit. M. J.*, 1895, vol. ii., p. 462. [2] *Ibid.*, p. 495.

Dr. F. A. Dixey's statistics of diphtheria in London, from 1891 to 1895,[1] give further evidence in favour of the utility of modern treatment, inasmuch as he finds a diminution in mortality which has become apparent since the spring of 1894. The average weekly number of deaths from diphtheria for the whole year, which rose from 26.2 in 1891 to 36.2 in 1892, and to 62.8 in 1893, fell in 1894 to 51.4, and for the first half of the present year to 33.5. It is evident that from some quarter fatal diphtheria has received a very decided check, and this is not to be explained by any diminution in the occurrence of the disease, which has continued as prevalent as before.

The discussion of this subject, and the very striking results which are rapidly accumulating on all sides, make it incumbent on all who have to treat cases of diphtheria to profit by the experience already acquired. If ever clinical evidence is to be accepted as a basis for treatment we have it here in overwhelming abundance, and it will need much adverse criticism to weaken the evidence on which it becomes the bounden duty of the medical man to act in accordance with the results already acquired by scientific and clinical investigation. Dr. J. W. Washbourn, in the discussion on serum therapeutics, opened from the scientific standpoint by Dr. Klein,[2] makes the following state ment from a clinical point of view: "From a careful and critical examination of the statistics hitherto published, I have no hesitation in saying that they definitely prove the vast superiority of the antitoxin treatment over any other method of treatment that has hitherto been adopted."

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The debate on acute lobar or croupous pneumonia, its etiology, pathology, and treatment, was opened by Dr. R. Douglas Powell, who gave an excellent *resumé* of the present aspects of the question. After expressing much regret that he could not record any practical abatement in the mortality of the disease, he emphasised the fact that probably 20 per cent. of the cases were attributable to surface-chills, contracted through hygienic imprudence, especially amongst those past middle life, and this imprudence was likely to be encouraged by the fatalistic and inadequate view that the reception of a microbe was alone sufficient to cause the disease. After having reviewed other conditions besides chills, such as depressed vitality, privation, the uræmic state, rheumatic conditions, diabetes, &c., Dr. Powell passed on to the question: how far was the reception and cultivation of a specific organism essential? Friedländer's, Fränkel's, and Klein's microbes were contending for the honour of disseminating pneumonia, the pneumococcus of Fränkel being most in favour. Undoubtedly pneumonia was a specific general (and therefore a microbic)

[1] *Brit. M. J.*, 1895, vol. ii., p. 531. [2] *Ibid.*, p. 406.

disease, but the pneumococcus could not as yet be altogether accepted as *the* germ of pneumonia. He pointed out that besides the prevalence of this coccus in pneumonia it had been also found in healthy saliva, in urine, in the exudation of meningitis, in ulcerative endocarditis, in otitis media, and conditions which have little resemblance to or association with pneumonia. In secondary inoculations septicæmia was the most common result, and this was too loosely accepted as valid evidence of specific virulence. Pneumonia might resemble such diseases as tuberculosis, erysipelas, acute rheumatic tonsillitis, and influenza, which, although possessing a specific organism, required for their efficient etiology certain additional conditions of impaired vitality, local and general, to enable the organism to become aggressive. After describing some varieties of the disease, and having reviewed the principal methods of treatment in vogue, Dr. Powell expressed himself in favour of the routine saline treatment as sufficient and useful for ordinary cases, whilst various drugs such as strychnine, caffeine, digitalis, and morphia were most valuable remedies for special indications. He does not encourage treatment of the pyrexia, and would consider a temperature up to 104° to be normal. The pyrexia of pneumonia is brief, normal to the disease, unfavourable to microbic activity, and inasmuch as the growth of this germ was checked by a temperature of 104°, it was not advisable to reduce it when not excessive, and then not below 102°. He was not able as yet to sanction the use of antitoxin in pneumonia, but he thought that it would probably be along these lines that progress would be made in the future.

Dr. Washbourn continued the discussion, and spoke on the specific character of the disease, its artificial production, and its variations in virulence, the modification of the type being masked by local action, as in meningitis. He believed that the sole cause of the symptoms was the formation and action of toxins, and that the crisis was due to the formation of a substance called an antitoxin. Dr. Auld, Dr. Dreschfeld, and Dr. Foxwell all spoke on the specific infectious character of the disease, and Dr. Tyson considered that the bacteriological examination of the subject served to explain the great differences clinically met with in various cases. Many other speakers commented on various details of treatment, and I took the opportunity of expressing regret that the meeting had not heard from Dr. Petresco, of Bucharest, some details of the means by which he is able to report a mortality of only two per cent. in a series of 1,300 cases, after treatment by large doses of digitalis, in contrast to the usual results of English hospital treatment which show a mortality of twenty to twenty-five per cent. Dr. Balfour, of Edinburgh, also spoke in favour of digitalis, in moderation, to rouse the failing heart, and stated that as much as 120 grains would often be required if continued till the crisis occurred. Professor Baümler, of Freiburg, eulogised the utility of cold

bathing, but he did not approve of the use of medicinal antipyretics.

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The third subject for debate in the Medical Section was opened by Dr. Cheadle—the causes of acute rheumatism, and its relation to other affections. At first sight it does not appear to have much connection with bacteria and their products, but the theoretical existence of a poison as a cause of rheumatism is a matter of ancient history, although it still remains to be proved what the nature and origin of that poison may be. It was inevitable that modern investigations on microbes and toxins should re-open the question as to the nature of the rheumatic poison, and the debate introduced so ably by Dr. Cheadle will have done something towards a solution of these questions.

The first point emphasised was that acute rheumatism is a general disease, of which arthritis is but one of many symptoms. The cardiac affection of chorea was probably rheumatic, it being organic, and endocarditis being the most constant change in fatal chorea. Pericarditis and endocarditis were almost exclusively rheumatic, and so were the exudative erythemata. After a review of the influences of heredity and season, with especial emphasis on chill as a factor, a notice of the exhaustive researches of Dr. Newsholme associating the disease with low subsoil water and an unusually high soil temperature, led up to the idea that some general systemic influence existed, and that this must be a toxæmia rather than a neurosis. The toxæmic agent produced some more or less localised irritant effect on one or other of the tissues; it might be a chemical poison, it might be a product of a micro-organism. It was not uric acid (Haig), nor was it lactic acid (Prout), or a combination of these (Latham). The arguments in favour of invasion by a micro-organism had been forcibly given by Dr. Newsholme in his Milroy Lectures. Contagion must be rare; the disease had not been produced by inoculation in man, but nevertheless all the varied phenomena of the disease were suggestive of an infectious origin, although the specific organism had not yet been discovered.[1]

Sir Dyce Duckworth accepted the infective theory to a limited extent, and was looking for a more exact proof of the truth of the theory, but he considered that a diathetic disposition is also a necessary factor, and that this was transmitted by heredity; the infective theory failed as yet to account for all the features of the malady. Dr. Archibald Garrod considered that there was no evidence whatever in favour of the lactic acid theory, and that there could be little doubt as to the infective nature of the disease. The long-continued course, and the way in which the disease crops up like malaria, were more analogous to syphilis than to

[1] *Lancet*, 1895, vol. ii., p. 435.

an acute infectious disease. He suggested that the temperature curve of rheumatism was the result of the local changes, and that the chorea might be the result of a secondary toxin of microbic origin by a process resembling that of post-diphtheria paralysis. Dr. A. Mantle referred to his views on this subject published nine years ago, and gave instances of the epidemic prevalence of rheumatism, also of its frequent association with epidemic scarlet fever, and with infective sore throat. He had found cocci and bacilli in the joints and blood-serum of patients with acute rheumatism. Dr. Newsholme wished to abolish the term acute rheumatism, and maintained that clinical, pathological, and therapeutic considerations were strongly in favour of the view that rheumatic fever was a specific febrile disease. The evidence in many countries was in favour of an intermittent and epidemic prevalence, and in Norway there appeared to have been a gradual spread from a given centre. Dr. Haig again expressed his well-known views on uric acid, and believed that in all doubtful points the uric acid theory gives a satisfactory solution to the problems. Dr. S. Mackenzie observed that in several other microbic diseases no microbe had yet been found, and that chorea is just as much rheumatism as is acute polyarthritis. Dr. D. B. Lees observed that the occasional loss of knee-jerk in chorea, just as in diphtheria, was likely to result from the action of a blood poison. He suggested the analogy of diphtheria and of tetanus, in which a local multiplication of micro-organisms occurred and a general poisoning of the system by a toxin. Various other speakers were for the most part in favour of the microbic theory as an important factor in the etiology of this disease.[1]

R. Shingleton Smith.

SURGERY.

The subjects chosen for discussion in the Surgical section at the recent meeting of the British Medical Association proved instructive, more from the fact that they emphasised trustworthy methods of treatment which are too little known, rather than from the advancement of any very startling theories or therapeutic measures. The progress of knowledge is always slow, and it is a question whether the enormous mass of literature which now floods our libraries has not defeated its object by preventing the busy practitioner from separating the good, bad, and indifferent. Thus it is that we are content to go on in "the old sweet way," too often unconscious that the old order has been changed.

Sir William Stokes introduced the subject of the treatment of fractures of the upper third of the femur, and the chief point of interest was in his remarks on the treatment of impacted fractures of the neck of the thigh bone associated with con-

[1] *Lancet*, 1895, vol. ii., p. 435.

siderable deformity and shortening. There has generally been a wide-spread feeling against interference with impacted fractures because it was supposed that in these cases the fragments were in a better condition for union than when dis-impacted so as to permit a separation of the fragments. In other situations most of us have long ago ignored this crude principle—notably in the case of Colles's fracture, where the deformity is rendered less and the utility greater when the impaction of the fragments is forcibly overcome—and Sir William Stokes, Mr. Bryant, and others, have shown that under certain circumstances there is no reason why in cases of impacted fracture of the neck of the femur the fragments should not be forcibly separated and the limb brought to its proper length and position. In the case of the aged, it may not be wise to subject the tissues to a further damage than that caused by the injury, but in a young and vigorous adult we should not be content to leave the impacted fragments to become united in a distorted position, with consequent shortening and lessened usefulness of the limb, when, by purposely overcoming the impaction, the injured limb may recover with complete restoration of its former length and utility —and this is what should be aimed at. Union of fragments depends mainly on their correct apposition, and this can be secured with due care in both impacted and non-impacted fractures. This statement, of course, applies with equal truth to the so-called "intra-capsular fractures" of old age which really unite —if we treat them as if we expected to get union—in a more satisfactory manner than one would suppose by reading the various text-books. Indeed, speaking generally, there is no need to treat these "intra-capsular" fractures in a different manner to the so-called "extra-capsular" fractures, and it would be better to agree with Bryant and avoid this division of fractures of the neck of the femur into the intra- and extra-capsular varieties.

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In the second subject chosen for general discussion, Mr. Butlin in introducing the debate on the Surgical Treatment of Tumours of the Thyroid Gland, drew attention to the fact that there is too great a tendency to regard these growths as affecting the whole, instead of a portion only, of the gland. It would be just as absurd to speak of an "adenoma of the breast" as an "enlargement of the breast," as it is to adopt the usual term of "hypertrophied thyroid" where we should really speak of an "adenoma of the thyroid." It is of the greatest importance to recognise the fact that in a large number of thyroid enlargements only a portion of the gland is affected by a distinctly encapsuled growth, and when this has been "shelled out" from its capsule—which is the best method of treatment in these cases—the rest of the gland need not be interfered with. The removal of large and indefinite portions of the thyroid gland in cases of benign tumour is unnecessary, and is not analogous to

our treatment of similar tumours elsewhere. It is on this point that Mr. Butlin rightly insisted. Certainly, as Mr. Mayo Robson pointed out, the encapsulation is not always so distinct as Mr. Butlin's paper would make it appear, but it nevertheless behoves us to treat these tumours on a rational basis, although exceptional cases may require us to depart from our orthodox rules. Most English surgeons would prefer to perform the operation under an anæsthetic, and chloroform is generally chosen as tending to cause less congestion of the vessels of the neck than ether; but Professor Keen reminds us that Professor Kocher, and other Continental surgeons, are in the habit of removing large thyroid tumours without any anæsthetic, and apparently without causing the patient much pain. A vertical incision, supplemented, if needs be, by a transverse one, is usually adopted in England, but on the Continent a transverse incision (afterwards drawn together by subcutaneous suture) is favoured, because the subsequent scarring is less seen.

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Professor Murphy, by a demonstration on the cadaver of the use of his button, once more brought to mind the unsettled question of Intestinal Anastomosis. The fact that so many different kinds of sutures and mechanical means have been devised for the purpose of approximating divided intestine shows more than anything else that we have not yet got an ideal method, and although Murphy's button has rendered the operation simple and effective, there are many grave objections to its use, and it in turn will no doubt be superseded by other methods. The statistics[1] of recorded cases in which the Murphy button has been used are remarkable for the great success attending its employment, and Murphy[2] himself asserts his belief in the superiority of his device over all others. Treves[3], too, speaks highly of the button. On the other hand, Senn believes in his absorbable plates, Mayo Robson in his "bone-bobbin," Von Baracz and Dawbarn in vegetable plates, and König and others discard all forms of apparatus and rely only on suturing. Dawbarn,[4] in discussing the relative value of the Murphy button and absorbable plates, maintains that, with the exception of the operation of cholecystenterostomy, approximation by means of the Murphy button gives inferior results to those obtained by such absorbable plates, and supports his argument by quoting several unsuccessful cases where the Murphy button was used, and by referring to an article by Magill,[5] in which the statistics are discussed in detail. Dawbarn has always insisted on the superiority of raw vegetable (turnip) plates over those made of decalcified bone, though of course the principle remains the same in each; and certainly the

[1] *Med. News*, vol. lxvi., 1895, p. 141, and *Practitioner*, [vol. liv.,] 1895, p. 454.
[2] *Lancet*, 1895, vol. i., p. 1040. [3] *Practitioner*, [vol. liv.,] 1895, p. 481.
[4] *Ann. Surg.*, vol. xxi., 1895, p. 166. [5] *Ibid.*, vol. xx., 1894, p. 297.

vegetable plates have the advantage of being cheap, always obtainable, and of more rapid absorption, so that they are less likely to cause obstruction. The most rigid test on this point is, of course, a gastro-enterostomy; and Von Baracz's frequent successes with such plates, in this operation, speak for themselves. König[1] thinks that the use of the Murphy button, by enabling surgeons of less experience to operate, is by no means an advantage to the patient; and although he recognises the fact that the time occupied in the operation of intestinal anastomosis may be shortened by the use of the various mechanical means we have referred to, believes that a prolonged laparotomy does not lead to shock. He therefore still uses the method of suture which he considers has been shown to be safe, instead of the more modern methods which, though rapid, seem to him of doubtful safety. Amidst this conflicting testimony a large discount must be allowed for individual bias. Most surgeons will be disinclined to agree with König as to the influence of a prolonged abdominal operation in producing shock, and, therefore, we are constrained to admit that there are instances in which we believe that mechanical methods have been the means of saving life, when used in cases that have been too exhausted to permit of the extra time demanded by accurate suturing. Those who have seen suturing plates, bobbins, and buttons used, have been struck with the simplicity and rapidity with which the invention of Dr. Murphy can be applied, and in this its superiority seems to rest. As I have already said, there are grave objections to its use in intestinal anastomosis—of which only I am speaking. The chief of these, if the button has been properly applied, consist in the possible blocking of the button itself while it remains *in situ*, and the secondary lodgment of the button in the ileo-cæcal valve, causing symptoms of obstruction. The latter of these is the more important, but can largely be avoided by a selection of a button of the proper size. In the large intestine this accident, of course, cannot happen, and here, at all events, we may, in ordinary cases, use the button with a good prospect of success. It must not be thought that the button can be used indiscriminately, even in the large intestine, and especially in cases of obstruction due to malignant disease, the merits of the case should be carefully weighed before resorting to its use. Indeed, in these cases, it is probably best, as advocated by Mr. Greig Smith, to operate in two stages. Intestinal surgery does not admit of the exclusive adoption of any one method, and the best results will be obtained by varying the means at our command, according to the needs of the individual case. The surgeon who feels competent to perform intestinal anastomosis by means of Murphy's button only had better not undertake the operation. This clever device is worthy of much praise, but it does not admit of universal

[1] *Brit. M. J.*, 1895, vol. i., Epitome, p. 26.

application, and can only be regarded as *one* of the best means we at present possess for the union of divided intestine.

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The simplicity and celerity in the application of the Murphy button depend largely on the fact that in placing each half of this instrument in the divided ends of the gut we have only to take what is known as a "purse string" stitch around each end of the intestine. This can be done very quickly, and leaves us with only one thread to tie. The final approximation of the upper and lower ends of the gut is then accomplished by pressing the two halves of the button together. In the various bone bobbins and tubes which have been devised a more elaborate system of stitching is generally necessary, and hence the operation is not usually so quickly performed as with the Murphy button; but the latest addition to the "bobbins" is as easily placed in the gut as Murphy's button, and this, though it is too new to have established any reputation, we feel bound to notice before finally quitting the subject. The decalcified bone bobbin of Mr. Herbert Allingham[1] has the form of two truncated cones joined end to end. The narrowest portion of the bobbin is therefore in the middle, and it follows that if purse string stitches be drawn tightly round the two ends of the divided gut they must each tend to slide to the middle of the bobbin, and therefore become approximated; and if the opposing portions of the intestinal peritoneum be scarified, plastic union will occur. In order to facilitate the firm tying of the purse string stitches the central part of the bone bobbin is not decalcified. This bobbin seems a step in the right direction, but in the absence of any practical experience in its use further criticism must be postponed.

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Another of the unsettled questions in abdominal surgery is the treatment of intra-abdominal lesions, the fatality of which is notorious. Here again we have the usual divergence of opinion, largely owing to the fact that a correct diagnosis is extremely difficult, for in these cases we find comparatively slight external evidences of injury, although the general condition of the patient is suggestive of a serious internal lesion. Deaver[2] thinks that the majority of these cases demand abdominal section; although, except in extreme cases, he would not advise it unless the diagnosis was tolerably certain. Chaput,[3] Berger,[4] and Michaux[5] are also in favour of early intervention. Michaux regards it as certain that an exploratory laparotomy should be at once undertaken in severe contusions of the abdomen. He insists that good results can only be ensured by early and rapid operation. Of six patients on whom he has

[1] *Lancet*, 1895, vol. ii., p. 518.
[2] *Ann. Surg.*, vol. xxi., 1895, p. 326. [3] *Med. Week*, vol. iii., 1895, p. 57.
[4] *Ibid.*, p. 68. [5] *Ibid.*, pp. 152, 177.

operated within the first twenty-four hours none died; but of four cases, in which operation was delayed to the twenty-third and twenty-sixth hour, third and seventeenth day respectively, two died. Sorge[1] writes in a similar strain, and refers to fourteen cases of abdominal injury (stabs, gun-shot wounds, contusions) in which he performed laparotomy as soon as possible, and of whom nine recovered. Battle[2] is of opinion that operation should be resorted to if the shock is considerable or increasing, and associated with a large or increasing amount of blood in the peritoneal cavity. In favour of a more expectant plan of treatment we find Berger,[3] Manley,[4] and Chaput.[5] The last-mentioned thinks that we should always abstain from intervention in cases of severe shock, unless there are such distinct symptoms of hemorrhage as to demand operation; but he considers that an operation is indicated by a previously existing shock, accompanied by abdominal pain, retraction of the abdomen, nausea, and bilious vomiting. Delorme[6] refers to nine cases of severe contusion of the antero-lateral walls, of which two only were subjected to operation: the other seven spontaneously recovered. Mr. Bryant[7] recorded twenty-seven cases of severe abdominal contusion treated on the expectant plan (for it was before abdominal operations were thought of in these cases), and all recovered except one. In summing up these various opinions, it seems pretty clear that except in very severe cases exploratory operations are unjustifiable. It is well-known that blows on the epigastrium are capable of producing the most severe symptoms, without causing any distinct lesion; and the knowledge of this fact alone should make us cautious in too hastily deciding to operate in the presence of mere shock. Where there are symptoms of severe hemorrhage or laceration of a viscus, our course is clearly to operate without delay; but in more dubious cases we can afford to wait and see whether the symptoms are improving or getting worse—a point which can generally be decided under twenty-four hours—and then plan our treatment accordingly. Manley[8] truly observes of these cases: "Laparotomy, serious as it is and always must be . . . . does occasionally offer the only possible hope of saving life, and for such should be recommended."

JAMES SWAIN.

DERMATOLOGY.

In his Presidential address[9] before the Dermatological Society of Great Britain and Ireland, Dr. Pye-Smith said that unless pursued by scientific methods and on pathological principles, dermatology would again, he thought, become, what it once

[1] *Brit. M. J.*, 1895, vol. i., Epitome, p. 82.
[2] *Lancet*, 1895, vol. i., p. 219. [3] *Med. Week*, vol. iii., 1895, p. 68.
[4] *Therap. Gaz.*, vol. xix., 1895, p. 12. [5] *Med. Week*, vol. iii., 1895, p. 161.
[6] *Ibid.* [7] *Guy's Hosp. Rep.*, 1861, p. 30. [8] *Loc. cit.*
[9] *Brit. J. Dermat.*, vol. vii., 1895, p. 219.

was, little better than a trade in cosmetics. But he holds that while "constitutional" remedies have an important place in the treatment of diseases of the skin, they are in most cases subsidiary to local applications, and that treatment in this, as in other branches of medicine, should be empirical rather than deductive. Dr. Pye-Smith considers that of all the internal physiological drugs at our disposal there are few more efficient than water. When judiciously taken in half-pint doses as a laxative in the morning, as a sedative at night, as a diuretic with a cool skin, or a diaphoretic when the skin is warm, as an expectorant or a refrigerant, its value is remarkable. He thinks no one will believe that it makes any difference whether sulphates are taken in mineral waters at Epsom, or Cheltenham, or Karlsbad, or dissolved in water by a druggist and sold in eight-ounce bottles. He thinks the contrary superstition would be as absurd as to suppose that it makes any difference in the effect of a warm bath upon the skin, whether it comes out of the earth at a given temperature, or is raised to the same degree in a kitchen boiler. But he insisted that it does make a great difference whether alkalies and salines are taken in large concentrated and infrequent doses, or in very small, very dilute, and very frequently repeated ones; and it makes a great difference whether a patient is ordered, in addition to his ordinary diet, to take three fluid ounces of water three times a day, or whether the dose be pints and quarts. In turning to what are called local remedies, Dr. Pye-Smith said we all admit the efficiency of local astringents, rubefacients, stimulants, caustics, or anodynes; but for them thus to act upon the living epithelial cells and corpuscles of the connective tissue, or the papillary blood-vessels, the touch-corpuscles, cutaneous nerves, and muscular apparatus of the hair-sacs, they must, he considered, either be absorbed through the dead horny layer of the epidermis by inunction, or they must gain access directly in aqueous solution to the living tissues when already denuded of their protecting cuticle. As he said, it is in this way that the vessels are effected by salts of lead, the sweat-glands by belladonna, and the cutaneous nerves by anodynes. He pointed out that a lotion on a whole skin runs off almost like water from a duck's back, and an ointment spread over a patch of weeping eczema never gets nearer the disease than the surface of the watery film on which it floats. Other remedies, however, those which are called ceratolytic, act, not vitally, but chemically and directly, upon the horny layer of epidermis. Others again, as sulphur, mercury, phenol, and boric acid, exert a destructive power, not on the skin itself, but on animal or vegetable invaders. Dr. Pye-Smith went on to say that there are, however, other most valuable local applications which have no such active and special properties. In fact they are chemically and physiologically inert, and yet are therapeutically useful. They act by supplying lack of sebaceous secretion, or

by protecting the skin from the irritation of sweat, or urine, or dust, or cold, or heat, or even from the mere access of air at ordinary temperatures. He said we all know how important it is in applying local remedies to the skin to decide whether they shall be conveyed in the form of powder, or as an ointment, or in aqueous, alcoholic or ethereal solution; and thought it was surely probable that the important difference of action which depends on the vehicle chosen will apply to the unmedicated vehicle itself. He said that merely covering an inflamed surface with an inert powder like starch is, we know, of great value in erysipelas and some forms of erythema and eczema; and probably similar applications of zinc, bismuth, and other chemical compounds differ rather by their physical than their physiological properties. So, also, he said, it is sometimes more important whether we choose benzoated lard, or wax and oil, or soft paraffin or lanolin for the vehicles of our ointments, than whether we put this or that drug in the vehicle. He thought we not infrequently meet with cases of dermatitis which may be properly described as *Noli me tangere*; for *any* local medication seems at once to aggravate the condition, and the only efficient treatment is to guard them sedulously from every kind of mechanical or chemical disturbance. He said he could not speak of cutaneous therapeutics without some allusion to the question of *meat* and *drink*, particularly with the modern meaning of the two words as denoting animal food and alcoholic beverages. He thinks there can be no doubt that in cutaneous medicine, as in other departments, "dieting" has been carried to an extreme and often a ridiculous minuteness. He said for most of our patients excessive quantity of food and imperfect mastication are much more important causes of illness than special quality. What most people eat is for most people wholesome, and what a natural appetite finds appetizing seldom disagrees. He believes, on most forms of cutaneous disease, diet has scarcely any effect. But he believes there are exceptions. With respect to drink, Dr. Pye-Smith thinks that water drunk freely between meals is an excellent diuretic, and seems to benefit most superficial forms of dermatitis; and the infusion of lemon with cream of tartar, known as imperial drink, is, he thinks, an admirable refrigerant, laxative, diuretic, and sedative. He states that eczema, when very irritable, and most forms of inflammation of the skin (as of other organs) in the early stage are believed, and he thinks with good ground, to be aggravated by alcoholic beverages of any kind. But in chronic forms of eczema, in psoriasis and most other dermatoses, he is not aware of any reason for prohibiting such amount and kind of wine or malt liquor as on other considerations are found to agree with the patient; and he is sure that in many cases of recurrent subacute erythema with anæmia, and in not a few of chronic eczema and of lupus, red wine taken with meals, and still more often porter, or, if this is not well borne, one of the lighter kinds of

ales, is not only harmless but useful. He believes for the marasmus we sometimes see along with general eczema in young children there is no drug so valuable as brandy, and he believes he has seen it "cure" as unmistakably as one can desire. But Dr. Pye-Smith confesses that he does not understand why patients suffering from diseases of the skin are so frequently ordered to drink spirits and water. He says, if alcohol in some form is indicated, and there are practical reasons against the use of wine or beer, by all means let us order it. But as a routine prescription he thinks it is most unadvisable.

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After Dr. Pye-Smith's address, Dr. Radcliffe Crocker read a paper on the "Internal Therapeutics of Psoriasis,"[1] in which he advocated salicylate of soda being given in fifteen-grain doses three times a day, without external medication. Dr. Crocker asked the opinion of the members present as to the efficacy of arsenic and thyroid gland in psoriasis, and the general opinion was that they were both disappointing in their effect. Arsenic was considered to be harmful if given in the early stage, or if there was much hyperæmia present, in which condition it would increase the rash. Dr. Crocker has had several cases in which the result was striking and conclusive, and the form in which this was particularly so was in extensive spreading cases of psoriasis guttata of recent development, the very form which is usually unsuited both for thyroid extract and for arsenic, the former especially sometimes producing a very rapid extension and multiplication of the patches in this class of case. In cases where there were only a few chronic patches the result was not, as might be expected, so brilliant. Dr. Crocker explained that the first effect of the drug appears to be the diminution of hyperæmia, so that the patches become paler, the scales are no longer formed abundantly, and the old scaly crusts are detached or are easily detachable, exposing a pale red surface, which gets smoother week by week, and finally leaves only a slightly stained surface. Dr. Crocker went on to relate what drawbacks he had found. In the more chronic forms of the disease he said the improvement had not been so striking, though, except in a few very old patches, there had nearly always been marked improvement. A few of his patients were unable to continue salicylate of soda, as it produced dyspepsia in the form of pain in the epigastrium soon after taking it. It was always given after meals to obviate any gastric irritation as far as possible. I find between meals is a better time to give salicylates, and it then appears to cause little or no nausea. It has been recently suggested that giving it in cinnamon water obviates any tendency to nausea. Salicin agrees better with some patients. It is possible that the pure natural salicin or salicylate may

[1] *Brit. J. Dermat.*, vol. vii., 1895, p. 227.

be more easily tolerated, but in the great majority of cases the cheaper synthetical product is sufficiently efficacious. Dr. Crocker has found salicylate beneficial in some other diseases of the skin,—for instance, in various forms of erythema multiforme, including erythema iris,—and he especially suggested its administration in erythema nodosum.

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Mr. Jonathan Hutchinson reports[1] a case illustrating the antecedents of lupus vulgaris in a middle-aged man. Mr. Hutchinson is no believer in the inoculation of the tubercle bacillus from without, as an ordinary cause of lupus. It seems to him far more probable that the parasite exists during long periods in a state of latency, from which any local injury may rouse it into activity. In this instance he thinks it was the occurrence of a boil which, reducing the vitality of the skin, made it an easy prey to the parasite.

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Mr. Jonathan Hutchinson[2] says that he ventures with some confidence to propose that the adjective "herpetiformis" should be used in reference to those forms of morphœa which resemble herpes in their distribution. He feels sure that this word will be found convenient, and that it will denote an obvious and important clinical fact. He mentions the following case, which he considers affords an excellent illustration of what he means: The group of morphœa spots were arranged in two long oval leashes on the clavicular region, exactly like herpes. The patches were also made up of separate spots, which, although they had coalesced in some instances, had by no means done so in all. Mr. Hutchinson considers the term "herpetiform" may be suitably applied to all cases of morphœa in which the changes are arranged in bands, or after the manner of a corymb or panicle. More than a few of these cases will be found to be bilateral, and in a certain number the streaks may be arranged almost symmetrically. Mr. Hutchinson goes on to say that the tendency to be bilateral, and to occur on many parts at once, is very rare in zoster, and very common in morphœa, but, in his opinion, does not in the least invalidate the theory of the nerve distribution of the latter. It proves only that many nerves may be affected at the same time, and possibly that in some cases there is a definite tendency for the same nerve-trunk on the two sides to suffer. Mr. Hutchinson hopes he will not be blamed for preferring still to use the old name "morphœa," rather than the new one of "sclerodermia." The latter, he says, is a pathological term; it denotes a theory, and is applicable to many affections, and to only certain stages of each. The former is a clinical one, is well understood in its conventional signification, and has

[1] *Clin. J.*, vol. vi., 1895, p. 172. [2] *Brit. M. J.*, 1895, vol. i., pp. 1194, 1434.

the great advantage of being almost meaningless as regards pathological theory. He says that, using the word morphœa in its old sense as applicable to all hide-bound conditions of skin, he would propose, by suitable adjectives, to discriminate its different forms. For clinical purposes these latter present us with most important pecularities of character. Mr. Hutchinson suggests that we may perhaps conveniently recognise three principal divisions, under each of which several groups may in the future be arranged. They are the following:

Division I.—Herpetiform morphœa; the patches being arranged on the pattern of herpes in streaks or bands, and however extensively bilateral, seldom or never with exact symmetry.

Division II.—Acroteric morphœa, in which, although the whole skin may suffer more or less, the beginning and the greatest severity of the disease are almost invariably at the extremities. No location in streaks, symmetry always marked, and Raynaud's phenomena not unusual. This form is met with almost solely, Hutchinson thinks, in adult women, and shows no tendency to spontaneous cure.

Division III.—Hide-bound conditions of skin, in which the subcutaneous tissue rather than the skin itself is implicated. In this division are to be placed for the present certain cases which differ more or less definitely from both the preceding, and concerning the exact relations of which it is very difficult to speak. There are no ivory patches, nor are the extremities preferentially affected.

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Dr. Allan Jamieson[1] says there are many who have the idea that cutaneous disorders are necessarily due to dirt. He asks us to discard this opinion. For if the laity hold that scabies is essentially due to dirt, they are right if they are considering the relation between the sum total of dirt and the sum total of this disease; but they are wrong if they wish to show that there is direct connection between the scabies of an individual and his personal habits of cleanliness. The most cleanly person may have the disease communicated to him; then do what he may in the ordinary domestic routine of bathing and washing, he remains infected until medical aids are brought to his assistance. He will never spontaneously get well, a fact we may remember by associating with it the saying of Dr. Leloir, that some people are born (or infected shortly after birth) with scabies, live their lives with scabies, and die in the same company. Dr. Jamieson warns us against the belief which seems to be commonly held amongst the members of the medical profession, that arsenic is a specific in skin diseases. Arsenic, he considers, is not such a specific, and is not by any means to be prescribed indiscriminately. The drug

[1] *Clin. J.*, vol. vi., 1895, p. 72.

possesses undoubted effects on the skin, as is evidenced by the disappearance of certain eruptions under its use, those of lichen planus, pemphigus, dermatitis herpetiformis, and, in some cases, psoriasis. That arsenic may cure or cause pathological conditions of the skin is shown by the fact that its long-continued administration produces hyperidrosis of the feet, a peculiar keratosis of warty nature of the soles and palms, and occasionally a species of cancer and well-marked pigmentation. Dr. Jamieson says we shall do well to remember once for all that it is absolutely useless in eczema. Dermatologists, however, differ in this view, as I recently heard Dr. Robert Liveing say at a meeting of the Dermatological Society that it was very valuable in some forms of eczema. Dr. Jamieson advises that the treatment of skin diseases should be carried out exactly on the same principles as is that of the diseases of other parts. Rest, he considers, is of primary importance; rest, together with the removal of all causes of irritation. Then soothing treatment, and only cautious—very cautious—stimulation.

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In the Dermatological Section of the recent Meeting of the British Medical Association, Professor McCall Anderson opened a discussion on the pathology and treatment of pruritus. Dr. Anderson thinks the itching must be treated empirically. He prefers the employment of electricity, atropia subcutaneously, or the coal-tar derivatives, such as antipyrine and phenacetin, in gradually increasing doses.

Dr. H. G. Brooke followed with a paper on the same subject. He thought the internal cause of pruritus should include the purely *nervous* pruritus—the primary pruritus of French authors. The tendency of the French school to deal much in "nerves" was alluded to. He considered it to be a "diathesis of itching," demanding external manifestation, and accompanied not infrequently by internal metastases, such as hay fever. Other forms of nervous itching, the expression of organic nerve disease, alienated mental states due to reflex causes, were also placed in this division as well as the influence of various poisons in the blood—*e.g.*, in gout, jaundice, diabetes, rachitis, foods, and drugs. The external cause included local skin diseases and parasitic skin diseases, as well as the pruritus due to changes in temperature and alterations in blood pressure. These were frequently the causes of irritation of the skin. He thought that its treatment could be properly undertaken only when the underlying causes were taken into account.

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Of the numerous patients exhibited in London, I thought the most interesting were those shown by Mr. George Stoker. The patients suffering from alopecia areata wear an indiarubber "chimney pot" hat, which is filled with pure oxygen through

a tube communicating with it. One of them was a girl aged 8, whose head became bald in August, 1894. Before this treatment there was a slight downy growth on the left occiput, and a few straggling hairs on the right parietal regions and on left eyebrow. After treatment upon this plan for two months there was growth of hair one-and-a-half inches long all over the head.

That oxygen possesses the power of healing very extensive ulceration, is shown by the case of a girl aged 16, who, when oxygen was ordered, had an ulcer on back (following burn), eleven inches by nine inches. Ulcer now measures five inches by three-and-a-half inches.

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Special attention should be given to a paper by Dr. Galloway on "The Nature and Causation of the Skin Lesions occurring in Nervous Diseases."[1]

HENRY WALDO.

Reviews of Books.

The Anatomy of the Nasal Cavity and its Accessory Sinuses. By DR. A. ÓNODI. Translated from the Second Edition by ST. CLAIR THOMSON, M.D. London: H. K. LEWIS. 1895.

These plates have been prepared from a series of sections through the nasal cavities, made by Dr. A. Ónodi, of Buda Pesth. The dissections have been first photographed and then engraved, so that each figure is perfectly true to nature and is not produced by combining in one picture the results of several dissections. The result is that the topographical relations of the nasal fossæ are rendered easy to understand, and by comparing vertical, coronal, and horizontal sections we can obtain as clear an idea of the intricacies of these parts as is possible by means of illustrations. The work is worthy of the highest praise. Each plate is abundantly explained by references on the plate itself, while a fuller description is given in the introduction. We are rather surprised to notice that in Plate 3 the author describes the superior meatus as comprising not only the part between the superior and middle turbinated bones, but also the part above the former, between it and the roof of the nose. This is generally described in English text-books as the spheno-

[1] *Brit. J. Dermat.*, vol. vii., 1895, p. 304.

ethmoidal recess, and the sphenoidal sinus is described as opening here instead of into the superior meatus as given by Dr. Onodi.

The plates will form a valuable means of instruction to anatomists and rhinologists.

Cod-Liver Oil and Chemistry. By F. PECKEL MÖLLER, Ph.D. Pp. cxxiii., 508. London: PETER MÖLLER. 1895.

It is equally difficult to understand the reason for associating these two subjects, whether the interesting account of the Norwegian fisheries be regarded as a preface to the systematic text-book of organic chemistry, or the latter a voluminous appendix to the engrossing description of the Maelström, the contour of the Atlantic bottom, and the ethnological peculiarities of the hardy Norseman. It is perhaps safe to assume that the whole work is the outcome of a legitimate desire to improve the acquaintance of medical men and others with cod-liver oil in general, and with that elaborated by Messrs. Möller in particular. Regarded separately, however, the two sections of this book are full of interest, and by no means devoid of originality.

The first part, treating of the origin, nature and uses of the oil, contains much valuable information. After a general survey of the localities in which the fish are found, and the method of catching them and rendering the oil, there follows a copious synopsis of scientific research on the composition of the latter from the earliest days to the present time. The practical outcome of the latest work is the recognition of the necessity for rendering the oil without exposure to air; and the experimental evidence upon which this newest process of manufacture and the author's explanation of the special nutritive value of this food are based is interesting alike to the prescriber and to the pure chemist.

The characteristic feature of the second part is the wealth of diagrammatic illustration: and although there is a constant danger of taking the representations to mean more than is intended by the author, there can be no doubt whatever that some such contrivance is necessary to convey to the average mind some conception of the frequently complex structure of the organic molecule. The accompanying text is couched in language remarkably clear and intelligible, if now and then a little playful, and the author is careful to point out where, as in tracing the connection between the physical characters of compounds and their molecular structure, he is inclined to differ from orthodox views. On the whole it is doubtful whether the student could find a more instructive guide to the mysteries of stereochemistry.

The Disorders of Speech. By JOHN WYLLIE, M.D. Pp. viii., 495. Edinburgh: OLIVER AND BOYD. [1894.]

This work not only deals with the disorders of speech, but also with the nature and origin of speech itself. It forms a complete study of the faculty of speech, and of its pathological changes. It is original in its conception and in the way in which this has been carried out, and should place the author amongst the most distinguished of medical writers. Its superlative qualities will, we think, cause it to be regarded as a classic in medical literature. This is high praise, but is due to the solid merits of the work and to the lucidity of the author's prose. Dr. Wyllie has evidently devoted many years of hard work and close thinking to the study of speech disorders, and has thus attained a complete mastery of his subject. The book bears evidence of the writer's wide experience, skilled powers of clinical observation, and full acquaintance with the literature of the subject. Thus, by clinical experience and extensive reading the author has thoroughly qualified himself for his work. But from painful experience in medical literature, we are only too well aware that a writer may have extensive knowledge without the gift of clearly presenting his facts to the reader. In this book, however, the style is never obscure and never involved; under Dr. Wyllie's skilful guidance, the difficulties of the subject, in many respects a most intricate and difficult one, disappear, and all seems plain and simple to the reader. It is only when the end of the book, in which there is not a dull page from cover to cover, is reached that we appreciate the magnitude of the task, and the labour that it must have involved to accomplish so successful a result.

The author begins by considering the subject of stammering, and in no section is the stamp of originality which characterises the whole work more manifest than this one. Many of our readers will be already conversant with the physiological alphabet that he has devised for the study and treatment of these cases. The proper treatment of stammering is too much neglected by the medical practitioner; and those who wish for a more accurate knowledge of it, and for a successful method of treatment based on scientific principles, cannot do better than to become thoroughly conversant with the author's writings.

Dr. Wyllie also shows how his physiological alphabet may be modified and adapted for the oral training of deaf mutes. He rightly emphasises the superiority of the oral system of teaching over all others, for these unfortunate persons; and thinks that the reason why it has never come into such general use in England as in France and Germany lies in the difficulties inherent in the English language, especially in the spelling, which is no longer even approximately phonetic. The reader will here find instruction as to the way in which these difficulties may be met.

Hysterical aphonia is fully considered, and in connection with this subject the author brings forward good evidence for his views, opposed to what is generally taught, that the larynx is concerned in whispering. Hysterical mutism is regarded as a more severe degree of hysterical aphonia, the larynx being the part affected in both. For a useful classification of the varieties of stammering, and of hysterical mutism, based on the same lines respectively, we must refer the reader to the book itself. A most interesting account of the other chief functional disorders of speech closes the first part of the book.

The second part deals with the development of speech in the child, which is treated at some length; full reference being made to the important work that has been done on this subject, especially to Preyer's book on *The Mind of the Child*. The consideration of the developmental derangements of speech follows naturally upon this, and the whole section is dealt with in a fascinating way. Defects of speech in idiots and imbeciles, dumbness or defective speech in persons not obviously imbecile, form the subjects of Chapters V. and VI. With regard to the latter persons, Dr. Wyllie thinks that, though not obviously imbecile, there is evidence of weakness of mind in these cases.

An excellent summary of the chief views as to the origin and development of language, the origin of writing and of printing, and then a valuable chapter on the disorders of speech in the various forms of insanity, follow.

By the foregoing considerations the author has paved the way and prepared the reader for what is perhaps the most important part of his subject, and certainly the most difficult part of it to treat well and lucidly—namely, aphasia. So much has been written about aphasia in its different forms, and such an abundant superstructure of theory has been raised upon the actual verified facts, that considerable judgment and discrimination are necessary to deal satisfactorily with it. This soundness of judgment the author possesses in signal measure, and the result is a masterly delineation of the subject most valuable to anyone desirous of acquiring a good working knowledge of the different varieties of aphasia.

The study of aphasia has thrown much light upon the workings of the mind, and more is known of the mental processes concerned in speech than of any other mental operation, but there are still many gaps in our knowledge. We can for instance represent, as the author points out, the manner in which, by combination of the impressions reaching the brain through the several afferent channels of the special senses, the idea of a concrete object such as an apple is built up; but we cannot thus represent a concept such as is involved in the word "nation," or the ideas represented by the adjective "beautiful." Dr. Wyllie's writings should stimulate other works in this important field to fill up some of these gaps, and will indicate along what lines advance may be made. The chief forms of

aphasia, their mode of origin and their clinical characteristics, are fully considered; and more briefly the rarer and less well authenticated sub-varieties. With regard to the question why we are left-brained as regards speech, why the speech-centres are developed only in one hemisphere, the author adopts Dr. Moxon's explanation, which after all is not much more than a re-statement of the fact "that in the training of the speech-centres it is favourable to the operation of the educating attention that it should . . . be concentrated upon one hemisphere, rather than divided between two."

We cannot enter into the discussion of the many interesting points connected with aphasia, which the reader will find uniformly well treated in this book. In any individual case in which speech is regained, it is well to bear in mind one element of uncertainty in the diagnosis; namely, that it is impossible to be sure whether the recovery is due to the fact that the lesion of the speech-centre was only partial, or is to be attributed to the education of the opposite hemisphere. We may mention that the author regards the posterior end of the third frontal convolution—destruction of which is disastrous to speech in man, but whose stimulation produces no movement of the lips and tongue in animals—as a storehouse for guiding psycho-motor pictures or memories, made up of memories of muscular and tactile sensations, and the base of the ascending frontal and parietal convolutions as executive motor mechanisms, and that he, quite rightly as we think, sees no need to assume the existence of an "ideational" centre.

The concluding chapter describes the anatomy and physiology of the motor tracts for speaking and writing, and also gives an account of much practical utility of the pathological alterations that occur in them, and the symptoms produced by lesions at different levels. In the form of an appendix, three recent cases of aphasia are detailed, and the author's graduation thesis on the physiology of the larynx (1865), in which he points out the important action of the false vocal cords in closing the glottis, is reprinted.

In conclusion, we must note the excellent practical advice given throughout the book with regard to the diagnosis and treatment of speech disorders, especially in the section on stammering, the examination and treatment of deaf mutes and of otherwise healthy children brought for advice on account of inability to speak, and in the treatment of aphasia. That the book will fulfil the author's hopes in being "practically useful," and in proving "of practical value as an aid in the prosecution of this important study," we can have no manner of doubt.

The dress in which this work is presented to the reader, as regards binding, printing, &c., is in all respects good.

The Aseptic Treatment of Wounds. By DR. C. SCHIMMELBUSCH. Translated from the Second German Edition by ALFRED THEODORE RAKE, M.B., B.S. Pp. xvi., 250. London: H. K. LEWIS. 1894.

This little book is an exposition of the method of wound-treatment adopted in Von Bergmann's Clinic—the method, that is, of aiming at asepsis by a process of sterilisation rather than by the action of antiseptics. The method is clearly and fully described, and Dr. Schimmelbusch has been at much pains in endeavouring to substantiate his position by bacteriological evidence, which leads him to conclusions very diverse from those of many eminent authorities. He prefaces his description of the details of the method by a useful little chapter on the germs of wound infection, and a more elaborate one on the means of disinfection; and it is here he appears to confuse the issues, and to be led astray by laboratory experiments. Furthermore, his comparative criticisms of the Listerian method are not of much value, as they show too imperfect an acquaintance with its general working, as well as a complete ignorance of the recent improvements in its *technique*. This controversial element apart, however, the book can be safely recommended as a clear and practical guide to the system in question.

Even in this emancipated field antiseptics cannot, apparently, always be dispensed with; but of these iodoform is the only one that commends itself to our author. The amount of "aseptic fever" expected as the normal and usual result of the majority of graver operations—often between 102° F. and 104° F., and lasting two or three days—will be a surprise to many surgeons; as also, the statement in another chapter that abscesses are "not uncommon" as the result of subcutaneous injections, a calamity that the author attributes to the inefficiency of such substances as carbolic acid for disinfection and the presence of germs in the injected fluids.

A chapter is devoted to the requirements of the operating and sick rooms, and another to the description in detail of a major operation, both which witness to one of the weakest points in this system of asepsis—viz., the absence of all protection against stray germs of infection that may be left or subsequently intrude—an objection whose weight is not lessened by the authoritative statements of its exponents, that "the exclusion of absolutely all germs at an operation, into which so many unavoidable complications enter, can hardly be reckoned on with anything like certainty," and that "the surgeon who does not most carefully stop all bleeding, will reckon in vain on the results and consequences of his antisepsis." The book ends with a very short chapter on the treatment of emergencies, especially in warfare; but we trust that the advice there given for the treatment of compound fractures with small

skin wounds of "refraining from slitting up, draining, &c.," and the application of a "simple sealed dressing," is not intended to apply to the ordinary routine of civil practice,—a point which is not made quite clear.

Mr. Rake is to be congratulated on his part of the work, and his translation, written in a simple, easy style, has laid English readers under a real obligation to him. An ample bibliography is appended.

Abdominal Tumours and Abdominal Dropsy in Women. By JAMES OLIVER, M.D. Pp. ix., 289. London: J. & A. CHURCHILL. 1895.

We regret that the author has departed from the time-honoured custom of commencing his book with a preface, as we might then perhaps have been informed of the object of producing a book which mentions so many diseases without a single line by which our knowledge of them is advanced. The work treats of much more than is implied by the title, and we find portions devoted to pregnancy, hernia, perityphlitis, spinal abscess, &c. In most cases the symptoms and physical signs of each disease are treated briefly; then follows a still briefer account of the treatment, in which the reader is left to take his choice; and then we have illustrative cases which fill up a large part of the book. As examples of the futility of endeavouring to get so much into the book and to so little purpose, we may mention that the operative treatment of uterine fibroids (p. 40) is summed up in ten lines; we are advised that "spontaneous rupture should, as a rule, be desired" (p. 129) in cases of pelvic peritonitis and subsequent suppuration; in about a page and a half, "perityphlitis" is dismissed without a mention of the vermiform appendix; ventral herniæ are treated with galvanism and tonics, or abdominal belts (p. 160); and it is said that in "spinal abscess," "it is probably better to allow the abscess to burst." We need surely say no more to show that the book is years behind the times, and displays an ignorance of modern surgery which is deplorable. The style of writing is rather loose and ambiguous, and we fear the British matron will be shocked by seeing in the opening paragraph that the uterus "harbours under ordinary circumstances a fecundated ovum." We feel compelled to state that we cannot recommend this book.

Diseases of the Ear. By A. MARMADUKE SHEILD, M.B. Pp. xii., 266. London: CASSELL AND COMPANY, LIMITED. 1895.

This is an excellent text-book for students, written by a general surgeon who has done good work in other departments

of surgery. It reminds us of the curious fact that the greatest advances in aural surgery have been made, in this country at least, by surgeons who are not merely specialists. We need only mention the names of Macewen, Barker, Hulke, Horsley, and Lane, as some of the foremost workers in this department of science; and now Mr. Sheild shows in the book before us how greatly a knowledge of general surgery facilitates a comprehensive grasp of this special department.

The book opens with a brief account of the anatomy and physiology of the ear, followed by a useful chapter on the examination of the ear. Affections of the auricle and external auditory canal are briefly dealt with, and a fairly full account of the diseases of the middle ear follow. We are somewhat surprised at the frequent recurrence of the term "otorrhœa" in alluding to the purulent discharge from middle-ear suppuration. This term ought now to be consigned to oblivion, as it is a legacy from the days when the pathology of this affection was not understood. The author prefers Löwenberg's method of passing the Eustachian catheter, but we should like to know what authority he has for speaking of this distinguished surgeon as "Lowenburg" (pages 44 and 216). The chapters on affections of the mastoid and on the diagnosis and treatment of cerebral complications of ear diseases are distinctly good, though necessarily brief.

The illustrations are not numerous, but there are four coloured plates and thirty-four wood-cuts which add to the value of the text.

The Vaccination Question. By ARTHUR WOLLASTON HUTTON. Pp. 128. London: METHUEN & Co. 1894.

We have read a great many strange things, and we have heard a great many wild statements; but we do not ever remember before coming across an intelligent man like Mr. Hutton, more assertive of doing strict justice to a subject, and at the same time displaying more prejudice and preconceived ideas. Vaccination is no good—and worse—because the author has determined that it is of no avail! he "will not be learned nor understand, but walks on still in darkness" (p. 70). We do not intend to deal with every point raised in this little work; if we can knock down, as we believe we can, some of his strongholds, the smaller outworks cannot well be held.

Jenner, like most earnest and enthusiastic men, did unquestionably maintain the life efficacy of vaccination. Time has gone on and has shown that vaccination is not more potent against an attack of small-pox than small-pox itself. An attack of severe unmitigated small-pox does not invariably render a person immune to a second attack, or even a second attack to a third; but these cases are very rare, and the supporters of vacci-

nation may admit that small-pox is, perhaps, rather more protective than vaccination and revaccination about the twelfth year: but the process is a very dreaded and dreadful one.

Then there is not a jot of proof that vaccination has any connection with syphilis,[1] as some modern pseudo-scientists assert. McVail has shown conclusively that deaths from infantile syphilis[1] are as frequent in Scotland during the first six months of life as in England; and yet vaccination is not carried out in Scotland until the sixth month and later. Whereas if vaccination were modified syphilis, the roll of deaths in England under six months, ought to outnumber those in Scotland, but they do not; nay more, the averages for both countries continue as nearly as possible alike, through all ages. Then again, we never knew that people who had syphilis, or who had had it, derived any special protection against small-pox in the way that vaccination unquestionably does confer it, which surely ought to be the case were vaccine modified specific germs.

There are many more assertions we should like to confute did space allow, but one we must notice. Certain very careful statistics have been published in Germany, where vaccination and re-vaccination have been rigidly carried out: they show that small-pox mortality is less there than in any other part of Europe, and epidemics are unknown. This cannot be the result of sanitation only. Sanitary measures have never produced such astounding results in other diseases, much as fevers and cholera have been diminished in their incidence. We pass on to deal with Tables I. and II. (pp. 68, 69), upon which the author evidently pins his faith. These tables are set forth to show how twenty-two towns or districts (not including London) have suffered from small-pox, during the last seven-and-a-half years up to June, 1894; and also how much, or how little, they have carried out vaccination; and the author assumes as a fair argument, that where vaccination has been most efficiently done, if there is any good in it, there should be a smaller incidence of small-pox, and, consequently, fewer deaths; and, on the other hand, where vaccination has been most neglected, there small-pox should show up the most disastrously.

In Table I. let us take Bristol, with its (assumed) 5.2 per cent. of vaccination default only, and compare it with Dewsbury with its 37.1 per cent. default. The deaths in Dewsbury are given as 126 (but there are one-and-a-half years short), and in Bristol at 123 (over-stated): 123 in well-vaccinated Bristol. 126 in badly-protected Dewsbury! *Primâ facie*, the latter very little worse off than Bristol! But, what an unfair, dishonest position! Dewsbury has, in round numbers, only a population of 30,000, whilst that of Bristol is 230,000. In a Dewsbury the size of Bristol, the deaths would have been not 126, but at the

[1] *Vaccination Vindicated*, 1887, pp. 136, 138.

very least 126 × 7, or 882! In a Bristol the size of Dewsbury, the deaths would have been 123 ÷ 7, or 17 only.

Take Sheffield: Mr. Hutton states the deaths at 711, in a population of, say, 324,000, or nearly eleven times the size of Dewsbury. In the same ratio as Dewsbury, they would have been 1386. Or, again, to take the boasted Leicester. We will admit that the place has escaped, so far, a severe incidence of small-pox; but what is the mortality of vaccinated persons attacked, as compared with the unvaccinated? 1.1 per cent. in the former, 15.8 per cent. in the latter, according to most trustworthy figures published in the *British Medical Journal*. We may safely predict that Leicester will have its day of reckoning yet: and such a town not only shows a very bad example, but disperses a large number of unvaccinated persons far and wide, and thus inflicts most unfair conditions on other communities. After these statistics and their fallacies, we can appraise at its right value the "reasonable hypothesis of constitutional immunity" (p. 72), as an explanation of the freedom of revaccinated cases from small-pox, and laugh at the charge that vaccination is kept up by doctors in Harley Street (note p. 111), and the corporation of doctors generally, for pecuniary interest. The gravamen is absurd in the extreme. It would be far more profitable for medical men to vaccinate and revaccinate themselves, their families, and friends, and then let small-pox run rampant.

Mr. Hutton is greatly to be blamed for the introduction of the almost blasphemous picture of calf-worship (p. 115), and, being librarian of a large political club, he ought to be specially censured for publishing a book without an index.

On the Geographical Distribution of Tropical Diseases in Africa. By R. W. FELKIN, M.D. Pp. 79. Edinburgh: WILLIAM F. CLAY. 1895.

Dr. Felkin divides the vast area of Africa into eight divisions, and adopts a system of symbols which by their shape, colour and number indicate the presence, the prevalence or the intense prevalence of the diseases common to each region. The reader has therefore only to master the significance of the symbols, and then by looking at the important map which is given he can see at a glance the insalubrity or otherwise of any particular region.

It is needless to say that the pink colour indicating malarial districts is by far the most prevalent, especially on the West, South-West, and East Coasts, and on that immense belt of low-lying water-logged land which forms the barrier between the sea and the high plateau in the Interior and which has been truly named the Grave of the White Man.

There are short descriptions given in the work of the various diseases in each region with some remarks on treatment.

The author is a firm believer in the microbe discovered by Laveran as the cause of malarial fever. He considers that Egyptian Chlorosis and Bèri-Bèri, to which it is akin, are caused by the larvæ of anchylostomum duodenale. He does not consider yellow fever to be a malarial disease at all, and that it requires for its development only a certain temperature and a certain amount of moisture in the air—a temperature of 68° to 70° F. and 74 per cent. of moisture. He regards it as a disease of filth, which rarely leaves the sea coasts and the mouths of rivers.

Dr. Felkin strongly advocates the use of large doses of ipecacuanha in the treatment of tropical dysentery; but we regret he did not acknowledge the merit (one which has met with scanty reward), due to Edward Scott Docker, late Surgeon of H.M. 18th Hussars, the originator of that treatment, by which the mortality of the disease has been greatly reduced.

Upon the whole this is a useful little book.

Wintering in Egypt. By ARTHUR J. M. BENTLEY, M.D. and Rev. C. G. GRIFFINHOOFE, M.A. Pp. 188. London: SIMPKIN, MARSHALL, HAMILTON, KENT & CO., LTD. 1894.

This eminently practical and most graphic sketch of life in Lower Egypt will prove of great service to physicians who contemplate sending patients to Egypt, as well as to all who are about to start for that interesting land. It contains much information of a useful character on the alternative routes, their cost, and the kind of outfit that travellers should provide. Dr. Bentley's remarks on the climate of Egypt and the class of cases that will be benefited by a stay there are clearly and concisely expressed, and exhibit a judicious moderation and cautious judgment.

Dr. Bentley is careful to give us his summer and winter addresses, but the authors have not taken the trouble to provide their book with an index.

Anatomy and Art. By ROBERT FLETCHER, M.D. Pp. 24. Washington: JUDD & DETWEILER. 1895.—The question whether Art has received any considerable aid from Anatomy is discussed by Dr. Fletcher in a light and interesting, but rather discursive, manner in this address, which he read before the Philosophical Society of Washington on December 12th, 1894. He comes to the conclusion that Egyptian and Greek sculptures and bas-relief owed nothing to knowledge of the structure of the body, and that the most perfect works of Pheidias and his contemporaries were entirely copies from models

often idealised, but quite independent of anatomical knowledge deeper than surface markings. It was not until the Italian renaissance that dissection of muscles, veins, &c., began to be used by artists, and the result was seen in minute attention to anatomical detail. Whether they really gained much by this is an open question, which is only touched upon in this pamphlet.

Diphtheria and its Treatment. By BROWNLOW R. MARTIN, M.B. Second Edition. Pp. 64. London: BAILLIÈRE, TINDALL AND COX. 1895.—The author has decidedly improved on the first edition by cutting out the advertisements, which formerly exceeded the text in number of pages, and by giving statistics of cases treated by his method, which consists in administering sulphite of magnesium internally and insufflating it locally. The treatment has been successful in other hands as well as his own, and seems to be deserving of further trial.

Laboratory Guide for the Bacteriologist. By LANGDON FROTHINGHAM. Pp. 61. Philadelphia: W. B. SAUNDERS. 1895.—It is scarcely possible to practise the various operations necessary for the examination of micro-organisms without experiencing an almost irresistible desire to vary the prescribed procedure in innumerable ways; and although few of these experimental variations may ultimately prove to be advantageous, it is very desirable to keep brief notes of what has been done. It is further very convenient to have standard methods collected in a compact form for easy reference in the laboratory. These requirements are satisfactorily met by the work under notice, consisting as it does of clearly-printed concise descriptions of the various processes, interleaved with blank pages for annotations. Absolute accuracy of detail is above all things necessary here, and a fairly close inspection has resulted in the discovery of one important error only—the proportion of potash in Löffler's methylene blue solution being increased tenfold. The only portion of this book laying claim to originality is the introduction, which consists of suggestions as to the most convenient and rapid way of operating: these notes are thoroughly practical, and, with the exception of a curious confusion between the terms "slip" and "cover-glass," admirably clear. There is perhaps a tendency to sacrifice too much to secure the utmost rapidity of execution: for instance, with such material as tubercular sputum, spreading on the cover-glass with a needle will not satisfactorily replace squeezing out between two covers.

Urinary Surgery. By E. HURRY FENWICK. Pp. 219. Bristol: JOHN WRIGHT & Co. 1894.—The surgeon is always anxious to know the advance which modern surgery is constantly making. In the department of urinary surgery this need is well supplied by this work of Mr. Fenwick's. Those who have time can, by means of his numerous references, turn to the original articles from which the book is a compilation; but to the busy surgeon

the information given in the book as to diagnosis and new methods of treatment will be of great value. We often want a book to supplement the last editions of the leading text-books, and this Mr. Fenwick's does in his special department. The author contributes an original article on tumours of the bladder, and electric urethroscopy, and the use of the cystoscope is fully described. We welcome the book as one of great practical value. It is the first of a series of "Epitomes of Modern Surgical Progress."

Syllabus of Gynecology, based on the American Text-Book of Gynecology. By J. W. LONG, M.D. Pp. 133. Philadelphia: W. B. SAUNDERS. 1895.—If we must have a syllabus of gynecology, no doubt it is well to choose the American text-book as the standard; but we are amongst the number of those who think that works of this kind are better made by students and practitioners themselves. When prepared for us by others, their use is very limited, and many students are apt, in the perusal of such condensed pages as these, to snatch at the shadow, and lose the substance of the larger manuals. Apart from these opinions, the work has been carefully compiled and planned in a most clear manner, and leaves little to be desired. The book has been interleaved, which will render it more useful for the purpose of note-taking. Typographical errors seem scarce, but we saw "Bacillus colis commune" on page 7.

The Mother's Help and Guide to the Domestic Management of her Children. By P. MURRAY BRAIDWOOD, M.D. Pp. viii., 134. London: THE SCIENTIFIC PRESS, LIMITED. 1894.—Dr. Braidwood appears to have carefully avoided the objectionable features that are often found in books of this kind; but whether this will prove advantageous to the sale of his book is another matter. The rules laid down for the mother's guidance are clearly and concisely stated, and amongst the suggestions are very few to which we can take exception. We can confidently recommend the book for the purpose for which it is intended, and we think it contains many hints that would be valuable to the junior practitioner. The style of its publication leaves nothing to be desired.

Essentials of Practice of Pharmacy. By LUCIUS E. SAYRE, Ph.G. Second Edition. Pp. ix., 17-200. Philadelphia: W. B. SAUNDERS. 1894.—This work is intended for pharmaceutical, rather than medical, students; and it is based on the United States Pharmacopœia. It is in the form of questions and answers, which are well-arranged, and the information is concise and clearly put; but there is evidence of carelessness in the correction of proof-sheets, especially in regard to chemical formulæ and reactions.

Notes on the Newer Remedies. By DAVID CERNA, M.D., Ph.D. Second Edition. Pp. 253. Philadelphia: W. B. SAUNDERS. 1895.—It must be exceedingly difficult to keep pace with the very

large number of new drugs mentioned in this work. The author has given an excellent epitome of what is known, but no one person can be expected to use so many weapons and to use them efficiently. Those who are in search of new drugs will find all they can wish for here, and will have a reliable guide for investigation in little-known fields.

The Droitwich Brine Baths as Therapeutic Agents in Various Diseases. By W. H. TOMLINS. Pp. 22. London: H. K. LEWIS. 1895.—The author of this pamphlet endeavours to show that Droitwich may justly claim a much higher place than it has as yet secured as a health-resort.

Food for the Sick and Convalescent. By MARY FEACHEM. Pp. 8. Bristol: ROSE AND HARRIS. 1895.—This booklet contains a number of recipes for the making of ordinary foods for the invalid. The instructions are simple and easy to follow: the results should be excellent. The authoress is a Diplomée First Class, South Kensington, and her instructions appear to be founded on the elementary principles of chemistry, which in relation to cooking are frequently either forgotten or ignored.

The Prevention of Small-pox, with Special Reference to the Origin and Development of the Stamping-out System. By EDGAR M. CROOKSHANK, M.B. Pp. 40. London: H. K. LEWIS. 1894.—We have very little to say about this pamphlet, which consists of an inaugural address delivered before the Medical Society of King's College. The history of the Plague in London is well and tersely written, and interested us much; and we should heartily rejoice at the foundation of an "International Board of Health." This, if properly conducted, should be productive of nothing but good; but this would not include giving up vaccination. We contend that vaccination and re-vaccination should go hand-in-hand—or better, arm-to-arm—with all systems of isolation and notification. When the whole of Europe is determined to isolate and thus limit the spread of small-pox infection, then the time might come when vaccination would be of less import; but that time is far distant yet.

The Sick Poor in Workhouses. First Series. Pp. xiii., 53. London: SMITH, ELDER & Co. 1895. This pamphlet is composed of twelve reports on the state of our provincial workhouses and infirmaries, by a special commission of the *British Medical Journal*, with an introduction by Mr. Ernest Hart. As they have already been published in the *Journal* of the Association, the main facts are known to most of our readers. Mr. Hart's excellent work in conjunction with the late Drs. Anstie and Joseph Rogers on the London Infirmaries in 1865 is still fresh in the minds of many, but it is only too clear that a new crusade is urgently needed. After reading the accounts of the infirmaries in 1865, one is surprised to find, thirty years after, almost the same conditions prevailing. That such a state of

things existed, or could exist, is a revelation to many, and the British Medical Association is to be heartily congratulated on the exposure it has made. We are glad to observe that many Boards of Guardians have taken the criticism to heart, and are thinking, if nothing more, of putting their houses in order. It is evidently time they did. The commission gives praise when it is due.

The Johns Hopkins Hospital Reports. Vol. IV., Nos. 4–5. *Report in Neurology*, II. Baltimore: THE JOHNS HOPKINS PRESS. 1894. —This volume consists of papers by Dr. Berkley detailing the results of researches, made by Golgi's chrome-silver method, on the finer nerve-supply of various organs. It would be impossible to give in detail the important results arrived at for each organ; but those relating to the lung may be briefly mentioned in order to show how these investigations bear out, and offer an anatomical basis for, deductions long since made from physiological and clinical researches. The main nerve-supply of the lung is derived from nerve plexuses which follow the bronchial arteries; from these plexuses fine nerve-fibres pass off to end in the coats of the bronchial tubes, as small rounded end-knobs in the closest apposition to the plain muscular fibres, and as fine terminations in the mucous membrane, some ending in the subepithelial tissues—others, more particularly in the smaller bronchi, in the cement spaces between the epithelial cells. The pavement epithelium of the pulmonary alveoli has no nerve supply. This evidently harmonises with received opinions that interchange of gases between the alveoli and the blood capillaries is in the main, if not entirely, a mechanical one, dependent on the relative tensions of oxygen and carbon dioxide in the air and blood. It also supports deductions made from the study of asthma that the bronchial musculature has an extensive motor nerve-supply, and that the bronchial mucous membrane is extremely sensitive to the quality of the inspired air. Equally important results for the cardiac ventricles, the thyroid, the pituitary gland and the submaxillary gland are also given by Dr. Berkley, whose papers merit most careful study.

The Middlesex Hospital. Reports of the Medical and Surgical Registrars, and Pathologist for the year 1893. London: H. K. LEWIS. 1894.—These reports contain the usual account of the work done at the Middlesex Hospital in the various departments during the year 1893, with a detailed account of the more interesting and important cases. It thus forms a valuable store-house of clinical observation. In addition there are several important abstracts by the Surgical Registrar. We especially notice those on cases of strangulated hernia and perityphlitis during the years 1890–1893 inclusive; another on fourteen cases of laparotomy for exploration and other purposes; and a series of abstracts of operations on the kidney

for fourteen years from the original operation of nephrolithotomy in 1880 to the end of 1893, which comprises the details of 118 operations, and cannot fail to be of great value to all interested in renal surgery.

The Westminster Hospital Reports. Vol. IX. London: J. & A. CHURCHILL. 1895.—This volume reminds us that during the past year two well-known Westminster men—Octavius Sturges and Barnard Holt—have died, and the book contains a fitting eulogy of each, with an excellent portrait of Dr. Sturges. The ground covered by these reports is a wide one, and there is much interesting material brought together from the various branches of the profession. Speaking generally, the articles and reports are well written. Under the able editorship of Dr. R. G. Hebb, this volume fully maintains the reputation of the series.

Transactions of the Medical Society of London. Vol. XVII. London: HARRISON AND SONS. 1894. This volume contains papers of exceptional interest on the association between variations of pulse, Graves's disease, epileptiform convulsions, and infantile convulsions. Dr. Bristowe relates a series of cases in which fits of an epileptiform character were induced by extreme slowness of pulse. Mr. Arthur Maude's papers on Graves's disease all tend to the conclusion that "the universal goitre, the connection with myxœdema, and the results of operations on the thyroid, point to that gland as the fountain head of evil." Dr. Alexander Morison points out that the cardiac state may be regarded as an important key to the treatment of infantile convulsions. Mr. Frederick Treves's Lettsomian lectures on Peritonitis are reprinted in this volume, and the starting points of tuberculous disease in children are described by Dr. J. Walter Carr. The fact that perforation of a chronic ulcer of the duodenum has been successfully treated by excision in the case related by Mr. Henry Percy Dean is worthy of being recorded, and gives encouragement to surgical treatment of the not uncommon cases of perforation from gastric ulcer or from typhoid fever.

Medico-Chirurgical Transactions. Vol. LXXVII. London: LONGMANS, GREEN AND CO. 1894.—This volume is one which opens by reminding us of our own shortcomings in comparison with the life-history of the series of great men whose "footprints on the sands of time" are sketched by Dr. W. S. Church, on stepping into the breach caused by the decease of the president, Sir Andrew Clark. The Society lost during the year no less than three Honorary Fellows and eleven Fellows, in addition to its president. The obituary notice gives interesting details of the lives of Marcus Beck, Jean Martin Charcot, William Morse Graily Hewitt, Sir Andrew Clark, John Tyndall, Professor Theodor Billroth, and several other well-known Fellows. Many of the papers which occupy the bulk of the volume are of considerable interest; but to us locally that of Mr. J. Greig Smith,

on the spontaneous disappearance of solid abdominal tumours, is perhaps the most noteworthy. What excellent cases would these have been for a demonstration in Paris of the miraculous cures effected at Lourdes!

Transactions of the American Surgical Association. Vol. XII. Philadelphia: WILLIAM J. DORNAN. 1894.—This annual volume of the American Surgical Association furnishes us with the usual interesting report of the papers read, and the discussions which have taken place during the year. The Surgical Treatment of Empyema is introduced by John Ashhurst, jun., in a paper full of valuable suggestions. The Methods of Teaching Surgery are discussed in papers by John S. Billings and John Chiene (of Edinburgh), and in debate by J. Collins Warren, W. W. Keen, Charles B. Nancrede, and others. Papers on The Surgery of the Kidney, by Louis McLane Tiffany; The Surgery of the Ureter, by Christian Fenger; The Treatment of Inoperable Malignant Tumours with the Toxines of Erysipelas and the Bacillus Prodigiosus, by William B. Coley; and half-a-dozen others make up a volume which is full of interesting reading, and fully maintains the high reputation of its predecessors.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Vol. XV.—UNIVERSIDAD–VZOROFF. Washington: GOVERNMENT PRINTING OFFICE. 1894.—We heartily congratulate the Editors of this stupendous work on another instalment of their labours. We have on former occasions noticed in these pages various volumes as they have been published, and have each time had to express our admiration for the manner in which the work has been done, and the completeness and clearness of the references. A review, as is generally understood, is impossible of such a book as this—the value of it is tested when one makes use of it, and we do not remember in the numerous occasions on which we have turned to it ever having found a misleading reference. We commend to the notice of authors the admirable way in which the references are made, with a hope that they may read, mark, and learn.

The Year-Book of Treatment for 1895. London: CASSELL AND COMPANY, LIMITED.—This useful volume requires no introduction to the profession, but it certainly well deserves the welcome that has been accorded to it in the past. The information under the various headings is well arranged and selected, but we could wish that some of the sections were more complete and that the index was fuller.

The Medical Annual. Bristol: JOHN WRIGHT & Co. 1895. —This well-known and useful volume is built up on lines very similar to previous years. It is a worthy successor of those which have preceded it. The names of those who contribute the various articles are a sufficient guarantee that the literature of our own and other countries, periodical and otherwise, has

been freely laid under contribution. The dictionary of new remedies and the articles on electro-therapeutics and on anti-microbic treatment, are specially interesting and useful parts of the work. We should like to see the 150 pages of advertisements arranged in absolute isolation from the volume itself: they have their field of utility, but they do not assist in the finding of the title-page, the preface, and the table of contents.

The Practitioner. Edited by MALCOLM MORRIS. London: CASSELL AND COMPANY, LIMITED. [January—June,] 1895.—We have received the first volume of the new series of this old friend, and have to congratulate the present Editor on the revived vigour of his new charge. The various modifications he has introduced are certainly likely to prove attractive: the summary of the month, and the Medico-Literary Causerie have been quite delightful reading, and we are gratified to find that their merit has been duly attested by the signs of increasing favour which the efforts of the Editor are month by month receiving; we wish him continued and increasing success in a work which must demand much time and talent. By some unaccountable oversight, the number of the volume is not given.

Visiting List. Third Edition. Bristol: JOHN WRIGHT & Co. 1896.—This list is now published in two forms—one has all dates, the other has the pages for visits in what is called "perpetual" form. Various minor improvements have been made, and we have no doubt that this visiting list will become increasingly popular. It deserves to hold a leading place amongst all the lists which have been devised. After an experience of three years, we can give ample testimony to its great convenience and utility.

Notes on Preparations for the Sick.

Papaïn (Dr. Finkler & Co.): Powder; Pills; Lozenges; Tablets.—B. KÜHN, London.—Much has been written on the Papaïn controversy, and on the whole this vegetable digestive from the Carica Papaya appears in by no means a disadvantageous light. It has been proved that it cannot be compared with Pepsine on account of its variety of digestive action, but this was taken as granted from the first. Its value as a digestive agent has, however, been proved to be in accordance with the experience of the natives who used the Papaw leaves.

Our own experiments have given the following results, showing that Papaïn is a more powerful digestive than the best of the animal pepsines in daily use, and is much less repulsive in character. The powder contains a slight amount of reducing sugar, a large quantity of albumen and also some albumose, but it has no action on starch. The action tested in acid, alkaline, and neutral media was as follows:—A mixture of stained fibrin and starch placed in test tubes with (1) .2 per cent. HCl; (2) Na_2CO_3; (3) distilled water. Placed in warm chamber at 39° C. for one hour, then removed and tested. Action of the ferment takes place very readily in No. 2 tube, about ½ as readily in No. 1 tube, and very slowly in No. 3 tube. This is evidenced by the depth of colour of solution which is formed by liberation of the carmine in the fibrin. On testing the solution they all contain varying quantities of *albumose*. They also contain very small quantities of peptone in following order: No. 2 most, No. 1 and No. 3 least.

Diurnules: Arsenious Acid; Copper Arsenite; Nitro-Glycerine; Strophanthin; Hyoscyamine; Atropine Sulphate.—PARKE, DAVIS & Co., London.—**Diurnules** are intended to save the physician all doubt and trouble as to the dose of various toxic drugs. Twelve diurnules represent in equal subdivision the maximum internal dose *per diem* for an adult. When it is desirable to prescribe for an adult the full daily dose of any such active principle, one diurnule is to be administered every two hours. If the dose has to be reduced, the diurnule is given less often. There can be no possibility of inadvertently giving an overdose.

Iron Jelloids.—WARRICK BROTHERS, London.—These are small flattened capsules, each of which contains the equivalent of ten grains of Pil. Blaud. They are made by mixing the freshly precipitated iron sub-carbonate with a jujube mass, by which the action of air on the iron salt is prevented. The light colour of the interior of these jelloids shows that the iron retains its unoxidised state. They are readily soluble in warm water, are easily swallowed as pills, and have little taste if leisurely masticated by those who cannot swallow a pill. They are a novelty, and an elegant form of a very favourite preparation of iron, on the original of which so many improvements have been successfully devised: these jelloids appear at present to be the climax of the series. Various sizes, and combinations with arsenic, have been prepared.

Mist. Hepatica Conc.—C. J. HEWLETT & SONS, London.—Among other active constituents of this somewhat complex mixture are cascara, rhubarb, jalapin, podophyllin, and cocaine.

The combination has received a rather fanciful name indicating its especial action as a hepatic stimulant. A dose of one drachm has a decided aperient action and does not usually give griping or tenesmus. The components of the fluid are all useful drugs when acting independently of each other: they do not seem likely to be inharmonious when given together, and experience has shown that they assist each other in this unscientific combination.

Somatose.—FARBENFABRIKEN VORM. FRIEDR. BAYER & Co., Elberfeld.—Peptones have not been altogether a success: they are always more or less nauseating, and their nutritive value has been much called in question. The Elberfeld firm say they have succeeded in their efforts to provide a preparation consisting almost entirely of albumoses, to which they have given the name **Somatose**, and for which Messrs. Bryce and Rumpff are the British agents. It is a light yellow powder, soluble in water, odourless and tasteless: it may be given by mouth or by hypodermic injection, it needs no digestion, and it contains no deleterious by-products: it must be rapidly absorbed, and should be invaluable in tiding patients through critical periods when the digestive powers are in abeyance. It may be given in solution in milk, coffee, cocoa, or gruel.

Our analysis shows that the powder contains a large quantity of peptone and dextrin, with slight amount of albumose and a trace only of kreatinin and of tyrosin.

Anti-Diphtheritic Serum Exsiccatum.—BURROUGHS, WELLCOME & Co., London.—Each tube in which this preparation is sent out contains one gramme of the serum, prepared in the form of fine golden scales; it is freely soluble in twice its volume of cold water, and it represents ten cubic centimetres of the normal liquid. It will keep for any reasonable period, and is therefore always ready for use whenever a need for it may arise. Every care is taken to maintain the therapeutic activity of this preparation: each tube is marked with the date, the number of the horse, and the degree of immunity; these facts are certified by the medical director in charge of the Bacteriological Laboratory.

Bronchi-fume.—W. A. MANNING, Birmingham.—This new remedy for asthma does not appear to differ much from the well-known powders in common use; but its agreeable aromatic odour, due to cubebs and aniseed, give it a distinctive character, and it of course contains the usual ingredients such as are found in all these powders (stramonium, cannabis indica, and nitrate of potash).

MALE NURSES.

It must have been in the experience of most medical men that there is considerable difficulty in obtaining male nurses to attend on those who, from their peculiar ailments, rather resent the presence and manipulations of a woman. We have much pleasure in calling attention to the existence of an institution where not only male nurses can be obtained, but where the sobriety of the attendant is guaranteed, a by no means unimportant matter when dealing with the male sex. The Male Nurses (Temperance) Co-operation has been in existence for more than a year, and from the need there is for trustworthy sober men for nursing, we believe that only a more thorough knowledge that there is such an institution is required for its continued success. The secretary's address is 8 Great Marylebone Street, London, W.

The Library of the Bristol Medico-Chirurgical Society.

The following donations have been received since the publication of the list in June:

August 31st, 1895.

R. E. Burges, M.D. (1)	30	volumes.
L. M. Griffiths (2)	2	,,
Arthur B. Prowse, M.D. (3)	4	,,
R. Shingleton Smith, M.D. (4)	4	,,
The Staff of Westminster Hospital (5)...	7	,,

Unbound periodicals have been received from L. M. Griffiths, the Sanitary Publishing Company, and Dr. R. Shingleton Smith.

SEVENTEENTH LIST OF BOOKS.

The titles of books mentioned in previous lists are not repeated.

The figures in brackets refer to the figures after the names of the donors, and show by whom the volumes were presented. The books to which no such figures are attached have either been bought from the Library Fund or received through the *Journal*.

Banks, W. M. ...	*The Gentle Doctor—Physic and Letters*	(3)	1893
Barclay, A. W....	*Medical Diagnosis*	(1) 3rd Ed.	1870

Barnard and G. B. Stocker, W. *Medical Partnerships, etc.* 1895
Blundell, J. ... *The Principles and Practice of Obstetricy.* (Ed. by T. Castle) ... ... (1) 1834
Browne, L.... ... *Diphtheria and its Associates* 1895

Carpenter, W. B. *The Microscope* ... ... (1) 6th Ed. 1881
Cleland, J. ... ... *Animal Physiology* ... ... (1) 1874
Cook, Lady... ... *On the Evils of Society and their Remedies.* 2nd Series 1895

Erskine, J.... ... *The Causes of the Neglect of Suppurative Ear-Disease* 1895

Fernie, W. T. ... *Herbal Simples* 1895

Gant, F. J. ... *The Irritable Bladder* ... ... (1) 3rd Ed. 1872
Gillies, H. C. ... *Counter-Irritation* 1895
Gimlette, J. D.... *Myxœdema and the Thyroid Gland* 1895
Griffith, J. P. C. *The Care of the Baby* 1895

Hansen and C. Looft, G. A. *Leprosy.* (Tr. by N. Walker) 1895
Harris, T. ... ... *Indurative Mediastino-Pericarditis* 1895
Harrison, R. ... *Some Points in the Practice of Lithotrity or Litholapaxy* 1895
Hart, E. ... ... *The Truth about Vaccination* ... ... 2nd Ed. 1895

Kingston, W. B.... *Claret* 1895
Kirkes, W. S. ... *Hand-book of Physiology.* 9th Ed. (Ed. by W. M. Baker) ... ... (1) 1876
Kissingen Spa ... ... (3) [N.D.]

Laycock, T. ... *Mind and Brain.* 2 vols. ... ... (1) 1860
Lee, R. ... ... *Clinical Midwifery* ... ... (1) 2nd Ed. 1848
Lewis, H. L. .. *Medical Electricity* ... ... 2nd Ed. 1895
Lewis, P. G. ... *Early Scoliosis* 1895
Looft, G. A. Hansen and C. *Leprosy.* (Tr. by N. Walker) 1895

Neligan, [J. M.] *Medicines.* 7th Ed. (Ed. by R. Macnamara)... (1) 1867
Nicolaysen, J. ... *Studier over Ileus* 1895
Nocard, E.... ... *The Animal Tuberculoses and their Relation to Human Tuberculosis.* (Tr. by H. Scurfield) 1895

Parkes, L. C. ... *Hygiene and Public Health* ... ... 4th Ed. 1895
Pereira, [J.] ... *Materia Medica and Therapeutics.* (Ed. by F. J. Farre, R. Bentley, and R. Warington) ... ... (1) 1865
Prentice, C. ... *The Eye in its Relation to Health* 1895
Pye-Smith, P. H. *The Ætiology of Disease, etc.* 1895

Quain, [J.]... ... *Elements of Anatomy.* 10th Ed. (Ed. by E. A. Schäfer and G. D. Thane.) ... ... Vol. III., Part II. 1895
Shuttleworth, G. E. *Mentally-deficient Children* 1895
Simon, J. ... ... *Public Health Reports.* 2 vols. (Ed. by E. Seaton) (1) 1887
Snow, H. ... ... *Radical Cure in Cancer, and other Reprinted Papers* ... 1895
Squire, P. ... ... *Companion to the British Pharmacopœia.* 14th Ed. (Ed. by P. W. and A. H. Squire) ... ... (1) 1886
Stocker, W. Barnard and G. B. *Medical Partnerships, etc.* 1895
Stokes, W.... ... *Diseases of the Chest*... ... ... Part I. (1) 1837

Thompson, Sir H. *Diseases of the Urinary Organs* ... ... (1) 1868

TRANSACTIONS, REPORTS, JOURNALS, &c.

American Dermatological Association, Transactions of the 1894
American Journal of Obstetrics, The ... ... Vol. XXXI. 1895
American Journal of Ophthalmology, The ... ... Vol. XI. 1894
American Journal of the Medical Sciences, The... ... ... Vol. CIX. 1895
Archives de Neurologie ... ...Tome XXIX. 1895
Asclepiad, The ... ... (2) Vols. IV. 1887, VI. 1889
Australian Medical Journal, The ... ... Vols. XV., XVI. 1893-94
Bäder-Almanach... ... ... (3) [1895]
Birmingham Medical Review, The ... ... Vol. XXXVII. 1895
Boston Medical and Surgical Journal, The... ... ... Vol. CXXXII. 1895
Bristol Directory ... ... (4) 1876, 1878, 1887, 1892
Bristol Health Report, 1894 1895
British Gynæcological Journal, The ... ... Vol. X. 1894
British Medical Journal, The ... ... Vol. I. for 1895
Bulletins et Mémoires de la Société de Médecine et de Chirurgie pratiques de Paris 1894
Centralblatt für innere Medicin 1894
Chicago, Annual Report of the Department of Health of, 1894 1895
Cincinnati Lancet-Clinic, The ... ... Vol. LXXIII. 1895
Dictionary of Bathing Places, Bradshaw's 1895
Dublin Journal of Medical Science, The (1) Vols. LXXXIII., LXXXIV., 1887; XCIX. 1895
Edinburgh Medical Journal ... ...Vol. XL. 1895
Edinburgh Obstetrical Society, The Transactions of the Vol. XIX. 1894
Hospital and Charities Annual, Burdett's 1895
Hospitals—
Edinburgh Hospital Reports ... ...Vol. III. 1895
Johns Hopkins Hospital Reports, The ... ... Vol. IV., No. 7-8 1895
London Temperance Hospital. Report upon the Surgical and Ophthalmic Cases admitted during the year 1894
Westminster Hospital Reports, The... ... (5) Vols. I.—VII. 1885-91
Indian Medico-Chirurgical Review, The ... ... Vol. II. 1895
Intercolonial Quarterly Journal of Medicine and Surgery ... Vol. I. 1895
Lancet, The... ... ... Vol. I. for 1895
Medical News, The ... ... Vol. LXVI. 1895
Medical Press and Circular, The ... ... Vol. CX. 1895
Medical Record ... ...Vol. XLVII. 1895
New York Academy of Medicine, Transactions of the ... ... Vol. X. 1894
New York Medical Journal, The ... ... Vol. LXI. 1895
Practitioner, The ... ... [Vol. LIV.] 1895
Progrès Médical, Le ... ... 3e Sér. Tom. I. 1895
Provincial Medical Journal, The ... ... (1) Vols. V.—VIII. 1886-89
Retrospect of Medicine, Braithwaite's ... ... Vol. CXI. 1895
Small-pox in Bristol during the Years 1893-4, Report on... 1895
Whitaker's Almanack ... ... (3) 1893
Year-Book of Pharmacy ... ... (1) 1878
Year-Book of Treatment, The... 1895

The William F. Jenks Memorial Prize.

This Prize, the competition for which we announced in June, 1894, has been awarded to A. Brothers, M.D., 162 Madison Street, New York, for the best essay on "Infant Mortality During Labour, and its Prevention."

Local Medical Notes.

BRISTOL HEALTH REPORTS.

The Medical Officer of Health and his assistants are to be congratulated on the very satisfactory Reports that have just been published and distributed, and the public of our city should be made acquainted with the fact that, though our sanitary rate may vie with that of most towns for size, we can boast of being not only one of the healthiest towns in England but in the world. Dr. Davies tells us that with 3888 deaths the general death-rate for 1894 is 17.16 per 1000 living, the lowest rate yet recorded for the city; but the ugly fact is mentioned that of these deaths 948 were of infants under one year, giving an infant death rate of 48.31 (*i.e.*, proportion to 1000 births). During 1894, 6393 births were registered (of which 2.9 per cent. were illegitimate) giving a birth rate of 28.81, continuing the decrease noticed with three exceptions since 1881.

Attention is called to the falling off in the number of cases of diphtheria—118 cases compared with 142 in 1893—and to the very high mortality from that disease; viz., 39.0 per cent. The number of cases of erysipelas (154 with 8 deaths), of scarlet fever (485 with 10 deaths), and of enteric fever (90 with 21 deaths), show a distinct falling off, while there is a slight increase in the number of fatal cases of measles and whooping cough. No cases of typhus or cholera occurred during the year.

Coming to the important question of vaccination, we find that in the Bristol Union in 1893, out of 1542 children 1186 were successfully vaccinated, a percentage on the total births of 76.91, a slight improvement on the returns of 1892, and comparing favourably with the returns for England and Wales for 1891. We cannot help thinking, however, that 13 insusceptible children is a large number. In the Barton Regis Union 6502 children were successfully vaccinated out of 8918 born between Jan. 1st, 1893, and June 30th, 1894, a percentage to the total births of 72.0. Here again we notice a large number—45—returned as insusceptible. We should like to know in how many of these cases there had been arm-to-arm vaccination.

On turning to the Supplementary Report on small-pox during the years 1893 and 1894 we find some interesting and instructive statistics and information on the introduction and spread of the disease. During these two years small-pox was introduced eleven times, 360 persons being attacked, 36 of whom died. The space at our disposal does not

allow of a thorough epitome of the Report, which must be referred to for further information. We should like, however, to draw attention to the following facts, which we think are worthy of consideration:

(1) That the heaviest mortality occurred in the unvaccinated (41 cases with 11 deaths, or 26.8 per cent), while in the patients—60—with four marks, the mortality—2—was 3.3 per cent., and the disease was mild in all but six cases. (2) That among the staff of 62 persons, composed of doctors, nurses, inspectors, labourers, and ambulance staff, all fully exposed to infection, only three took the disease, one terminating fatally. Of the two cases which recovered one had not been revaccinated, the other had been fourteen years before, while the fatal case occurred in a washerwoman, unrevaccinated for twenty years, who had been in contact with the disease for years and was consequently considered secure. Dr. Davies justly remarks that the protection of vaccination, though a real one, has a limit of time. There are many more interesting facts to be gathered from the Report, which will well repay a careful perusal.

In consequence of the prevalence of cholera upon the Continent during 1893, it was necessary that continued vigilance should be exercised during the spring, summer, and autumn months of 1894, when its recrudescence was most to be feared. The Port Sanitary District Report embodies an account of all the precautions which were taken, and which were eminently successful.

Dr. Davies calls attention to the inadequate means at his disposal for the proper disinfection of articles removed from infected houses. The disinfector—the Washington-Lyons—meets all requirements, but the receiving and distributing rooms require enlarging and remodelling. We hope that the Sanitary Committee will see their way to this outlay without any increase of the present rates.

The Meteorological Report by Mr. Rintoul, of Clifton College, is of considerable interest and displays great care in observation and compilation. It may interest our readers to know that 5.18 inches of rain fell between Nov. 8th and 15th, 1894, which we believe is a record.

UNIVERSITY COLLEGE, BRISTOL.

List of students who have recently passed examinations:—

University of London.—*Preliminary Scientific*:—Entire Examination. First Division—R. G. Johnson. *Chemistry and Experimental Physics*—J. D. C. Callcott, A. Coleridge*. *Biology*—F. H. Pickin.

Intermediate Examination in Medicine, July, 1895:—Entire Examination. First Division—W. R. Battye. Excluding Physiology. Second Division—H. T. S. Aveline, A. B. Cridland, W. S. V. Stock.

Examining Board in England by the Royal Colleges of Physicians and Surgeons.—First Examination. Part I.:—*Chemistry and Physics*—A. Coleridge, R. M. McQueen. *Practical Pharmacy*—W. E. H. Hancock, C. F. Walters. *Elementary Biology*—J. B. S. D'Aguilar, F. B. Hughes, C. W. W. James. *Elementary Anatomy*—J. C. Clayton, H. Hemstead.

Royal College of Surgeons.—June 13: *Licentiate in Dental Surgery*—F. Little. July 1: Second Examination. *Anatomy and Physiology*—R. J. Phillips, E. M. Pearce, F. Cox. *Physiology only*—C. M. Mitchell, F. C. Morgan.

Society of Apothecaries.—Pass List, August, 1895: *Surgery*—H. S. Maw. *Medicine, Forensic Medicine and Midwifery*—H. S. Maw.

* Completes Examination.

SCRAPS

PICKED UP BY THE ASSISTANT-EDITOR.

Clinical Records (12).—Athlete: "Did—I—break it, doctor?" Doctor: "Your arm is crushed, your collar-bone broken, your skull——" Athlete: "But—have—I—broken——" Doctor: "What?" Athlete: "The—record?"

Medical Missions.—Interest in medical missions generally must have been quickened by Dr. D. W. Torrance's manly and earnest utterances at the missionary breakfast at the recent British Medical Association meeting. He has part-charge of the work at Tiberias, and many will no doubt be glad to send him some help for it, pecuniary or otherwise. In reference to the work in the Holy Land, Mr. E. W. G. Masterman, the assistant medical officer of the English Mission Hospital in Jerusalem, writes (*Edinb. Med. Miss. Soc. Quart. paper*, Aug., 1895):—

"Palestine may in a sense be looked upon as the place of origin of all Medical Missions, for there the great Founder of Christianity gave His commission to 'Preach the Gospel and heal the sick.' In modern times, too, 'Medical Missions,' in the modern sense, had almost, if not quite, their first beginning in the establishment of a Medical Mission to Jews in the city of Jerusalem upwards of sixty years ago. At the present time there is no land in the world which has, in proportion to its size, more Medical Missionaries. In spite of this fact, it is the feeling of those most interested in the country that there is room for more, and probably at each Mission station the doctor feels he cannot overtake the work as he should. Apart from the sacred feelings connected with the Holy Land, which make many feel that it is a land which has claims on all Christians as a centre of Missionary effort, there is the outstanding fact that Palestine is one of those lands where Medical Missions hold the key to the hearts of the people. As in all lands under Turkish rule, the preaching of the Gospel is attended with the greatest possible difficulties, and no resources are left untried to prevent the Moslems from hearing the Gospel. This is both from religious and political reasons. Every convert from Mahommedanism is a loss to the Turkish army, for only 'the faithful' can serve as soldiers. Medical Missions are the plan of campaign of this modern crusade, which now attempts, by methods consistent with the Gospel of peace, to accomplish something better than that which was attempted and which failed under the brave but mistaken 'soldiers of the Cross' of crusading times."

Surgical Instruments of Antiquity.—Many doctors must have been glad at the Association meeting of the opportunity of renewing their acquaintance with the Oppenheimer collection (see the June, 1895, number of this *Journal*, p. 160), and with Dr. Sambon, who so pleasantly described it there and at Bristol in 1894. I here add some comments on the Naples museum in continuation of those I quoted in the last number from the Rev. Oswald Cockayne's *Leechdoms, Wortcunning, and Starcraft of Early England*. There is further an instrument for tapping the dropsical, described by Celsus (Lib. vii., cap. 15) and Paulus Ægineta (Lib. vi., cap. 50). It was somewhat altered in the middle of the seventeenth century by Petit. An instrument suited to carry off the dropsical humours by a little at a time on successive days, as Celsus (*loc. cit.*) and Paulus Ægineta (*loc. cit.*) recommend, has also been dug up. Rust and hard earth, which cannot safely be removed, have blocked up the canal of the relic and render conclusions less certain. The probe "specillum," μήλη, is reported by Cicero to have been invented by the Arcadian Apollo, who also was the first to bind up a wound (Cicero de Nat. Deor., lib. iii., 22). Seven varieties are figured in the book[1] of Professor Vulpes in one plate, with ends obtuse, spoon-shaped, flat and oval, flat and square, flat and divided. The obtuse knob was πυρήν; the spoon was κνάθισκος; those which had a flat extremity were σπαθόμηλαι; such as had a knob at each end were διπύρηνα. The catheter of the ancients is figured by the same writer. It was furnished with a bit of wood to be drawn out by a thread (Galen, Medicus, cap. xix.), to prevent the obstructive effects of capillary attraction and to fetch the urine after it when withdrawn. It is of bronze, and elastic catheters seem to be of modern invention. They have, or had in 1847, eighty-nine specimens of pincers in the Naples museum; fifteen are like what are now called anatomical pincers, one only has the form of the tenaculum, seventeen are depilatory pincers. One pair of nippers is rectilinear, terminating in points like a pair of compasses. Their names were λαβίδες, volsellæ. Hooks, hamuli, ἄγχιστρα, to the number of fourteen, had been laid up in the cases in 1847; also a trident for cauterising (Paulus Ægineta, lib. vi., cap. 48), and a spatula. A silver lancet was accompanied in the excavating by a small spoon, suited, as medical men agree, for examining a small quantity of the flowing blood. There are also cupping vessels of a somewhat spherical shape, from

[1] For review of this, see *Dublin Quart. J. M. Sc.*, vol. xiv., 1852, p. 130.

which air was exhausted by burning a little tow; a flem for bleeding horses, of the same shape as that now used; and a bent lever of steel, *μοχλικόν*, vectiarius, for raising the bones of the cranium in case of depression by fracture. Professor Vulpes has given us figures of eight steel or iron knives for various surgical purposes, and of a small plate, suitable in the form of its handle for the application of cautery by fire.

Medical Philology (XV.)—The *Promptorium* (1440) has "Chavylbone, or chawlbone. *Mandibula*," and also "Iowe, or chekebone. *Mandibula*." It carefully distinguished between Iowe and "Iol, or heed. *Caput*," although there is plenty of evidence that at times jowl and jaw were used interchangeably. Pynson's printed edition in 1499 read "chaule bone," and a 1498 MS. has "iovwe." The *Catholicon* (1483) has "a Chafte; *maxilla, mala, faux, mandubila, mandula, mola; maxillaris, participium*," and under "a Chawylle (Chavylle") and "a Chekebone" refers to this definition. Mr. Way in the Camden Society edition of the *Promptorium*, and Mr. Herrtage in his edition of the *Catholicon*, both have notes on these words. The examples I will quote, re-arranging them as nearly as I can in chronological order. "In the Cursor Mundi [c. 1280] David, when stating how he had killed a lion and a bear, says (ll. 7505–10)

'I had na help bot me allan . . . And scok þam be þe berdes sua
And I laid hand on þaim beleue þat I þair *chaftes* raue in tua,'

where the Fairfax MS. reads *chauelis*, and the Göttingen and Trinity MSS. *chaulis*. Halliwell quotes from MS. Cott. Vespas. A. iii. leaf 7:

'With the *chafte-ban* of a ded has Men sais that therwit slan he was.'

[This, a version of lines 1073-4 of the Cursor Mundi, alludes to the murder of Abel.] In Wright's Political Poems [this should be Songs, not Poems] (Camden Soc.), p. 240, we find 'to *chawle* ne to chyde' [temp. Ed. II.], *i.e.* to jaw, find fault. In the Anturs of Arthur [c. 1370] ([Three Metrical Romances], Camden Soc., ed. Robson), xi. 2, we read:

'Alle the herdus my3tun here, the hyndest of alle,
Off the *schaft* and the shol, shaturt to the skin.'

[The last word should be shin = chin.] In Sloane MS. [? 15th cent.] 1571, leaf 48b, is given a curious prescription 'for bolnynge vndur þe *chole*,' the principal ingredient of which is a fat cat. In Ywaine & Gawin [c. 1400], 1991, is:

'He strake the dragon in at the *chavyl*, That it came out at the navyl.'

See also E. E. Alliterative Poems, ed. Morris, p. 100, l. 268:

'With this chavyl-bon I xal slo the.' Cov. Myst. Cain & Abel [1468], p. 37.

Gawin Douglas, describing the Trojans on their first landing in Italy, tells how they

'With thare handis brek and *chaftis* gnaw The crustis, and the coffingis all on raw.'
Eneados [1513], Bk. vii., l. 250.

'*Brancus*. A gole or a chawle.' Vocabulary, MS. Harl. 1002. In the Master of Game, MS. Vespas. B. xii., leaf 34b, mention is made of the '*iawle-bone*' of a wild boar. '*Bucca, mala inferior*. The cheeke, iawe or iowll.' Junius. 'Chawe bone, *machovere*,' Palsgrave [1530.] Coverdale's Bible, 1535, reads, 'smyte the chaft bones of the lyons whelpes,' *Ps.* lvii. (A.V. lviii.), 6. 'I will open my mouth, and my tonge shal speake out of my chawes,' *Job* xxxiii. 2. In 1597 Peter Lowe, in his *Chyrurgerie*, has 'underneath the chaft bone.' Chaw-bone is met with almost as late as 1670. 'Chaftis, Chafts, the chops. Chaft-blade, the jaw-bone. Chaft-tooth, a jaw-tooth.' Jamieson, [1808.] A. S. *ceaft*. S. Saxon, *cheuele*."

The connection between chavyl and jaw—as shown in the plausible series of chavyl, chawle, chawe, jaw—is one that is not allowed by modern authorities. Prof. Skeat, in the second edition of his *Etymological Dictionary*, says: "I now believe that the words *jowl* and *chaps*, though allied to each other, are entirely unconnected with *jaw*." The *New English Dictionary* says that chavel is "a typical ME. form of the word now written JOWL, jaw-blade, cheek." It cites the Swedish *käft* (pronounced *chäft*), and the Danish *kieft*, chops, and says that chaft is possibly from a stem *kef-*, *kaf-*, "to make a chewing movement with the under jaw."

I would not dare to call in question the statements of these authorities, but would venture to suggest that sufficient importance has not been attached to the differentiation in the *Promptorium* of "Iol" and "Iowe."